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agt tct ctt gga gga aca gac aag gag ctg agg cta gtg gat ggt gaa      257
Ser Ser Leu Gly Gly Thr Asp Lys Glu Leu Arg Leu Val Asp Gly Glu
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aac aag tgt agc ggg aga gtg gaa gtg aaa gtc cag gag gag tgg gga      305
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acg gtg tgt aat aat ggc tgg agc atg gaa gcg gtc tct gtg att tgt      353
Thr Val Cys Asn Asn Gly Trp Ser Met Glu Ala Val Ser Val Ile Cys
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cat agt aac tgt act cac caa caa gat gct gga gtg acc tgc tca gat      545
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Gly Arg Ile Glu Ile Lys Phe Gln Gly Arg Trp Gly Thr Val Cys Asp
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Ala Leu Trp Asn Cys Lys His Gln Gly Trp Gly Lys His Asn Cys Asp				
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Leu Val Asn Gly Lys Thr	Pro Cys Glu Gly Arg	Val Glu Leu Lys Thr		
618	623	628	633	
ctt ggt gcc tgg gga tcc ctc tgt aac tct cac tgg gac ata gaa gat				2033
Leu Gly Ala Trp Gly Ser	Leu Cys Asn Ser His	Trp Asp Ile Glu Asp		
634	639	644	649	
gcc cat gtt ctt tgc cag cag ctt aaa tgt gga gtt gcc ctt tct acc				2081
Ala His Val Leu Cys Gln	Gln Leu Lys Cys Gly	Val Ala Leu Ser Thr		
650	655	660	665	
cca gga gga gca cgt ttt gga aaa gga aat ggt cag atc tgg agg cat				2129
Pro Gly Gly Ala Arg Phe	Gly Lys Gly Asn Gly	Gln Ile Trp Arg His		
666	671	676	681	
atg ttt cac tgc act ggg act gag cag cac atg gga gat tgt cct gta				2177
Met Phe His Cys Thr Gly	Thr Glu Gln His Met	Gly Asp Cys Pro Val		
682	687	692	697	
act gct cta ggt gct tca tta tgt cct tca gag caa gtg gcc tct gta				2225
Thr Ala Leu Gly Ala Ser	Leu Cys Pro Ser Glu	Gln Val Ala Ser Val		
698	703	708	713	
atc tgc tca gga aac cag tcc caa aca ctg tcc tcg tgc aat tca tcg				2273
Ile Cys Ser Gly Asn Gln	Ser Gln Thr Leu Ser	Ser Cys Asn Ser Ser		
714	719	724	729	
tct ttg ggc cca aca agg cct acc att cca gaa gaa agt gct gtg gcc				2321
Ser Leu Gly Pro Thr Arg	Pro Thr Ile Pro Glu	Glu Ser Ala Val Ala		
730	735	740	745	
tgc ata gag agt ggt caa ctt cgc ctg gta aat gga gga ggt cgc tgt				2369
Cys Ile Glu Ser Gly Gln	Leu Arg Leu Val Asn	Gly Gly Gly Arg Cys		
746	751	756	761	
gct ggg aga gta gag atc tat cat gag ggc tcc tgg ggc acc atc tgt				2417
Ala Gly Arg Val Glu Ile	Tyr His Glu Gly Ser	Trp Gly Thr Ile Cys		
762	767	772	777	
gat gac agc tgg gac ctg agt gat gcc cac gtg gtt tgc aga cag ctg				2465
Asp Asp Ser Trp Asp Leu	Ser Asp Ala His Val	Val Cys Arg Gln Leu		
778	783	788	793	

ggc tgt gga gag gcc att aat gcc act ggt tct gct cat ttt ggg gaa	2513
Gly Cys Gly Glu Ala Ile Asn Ala Thr Gly Ser Ala His Phe Gly Glu	
794 799 804 809	
gga aca ggg ccc atc tgg ctg gat gag atg aaa tgc aat gga aaa gaa	2561
Gly Thr Gly Pro Ile Trp Leu Asp Glu Met Lys Cys Asn Gly Lys Glu	
810 815 820 825	
tcc cgc att tgg cag tgc cat tca cac ggc tgg ggg cag caa aat tgc	2609
Ser Arg Ile Trp Gln Cys His Ser His Gly Trp Gly Gln Gln Asn Cys	
826 831 836 841	
agg cac aag gag gat gcg gga gtt atc tgc tca gaa ttc atg tct ctg	2657
Arg His Lys Glu Asp Ala Gly Val Ile Cys Ser Glu Phe Met Ser Leu	
842 847 852 857	
aga ctg acc agt gaa gcc agc aga gag gcc tgt gca ggg cgt ctg gaa	2705
Arg Leu Thr Ser Glu Ala Ser Arg Glu Ala Cys Ala Gly Arg Leu Glu	
858 863 868 873	
gtt ttt tac aat gga gct tgg ggc act gtt ggc aag agt agc atg tct	2753
Val Phe Tyr Asn Gly Ala Trp Gly Thr Val Gly Lys Ser Ser Met Ser	
874 879 884 889	
gaa acc act gtg ggt gtg gtg tgc agg cag ctg ggc tgt gca gac aaa	2801
Glu Thr Thr Val Gly Val Val Cys Arg Gln Leu Gly Cys Ala Asp Lys	
890 895 900 905	
ggg aaa atc aac cct gca tct tta gac aag gcc atg tcc att ccc atg	2849
Gly Lys Ile Asn Pro Ala Ser Leu Asp Lys Ala Met Ser Ile Pro Met	
906 911 916 921	
tgg gtg gac aat gtt cag tgt cca aaa gga cct gac acg ctg tgg cag	2897
Trp Val Asp Asn Val Gln Cys Pro Lys Gly Pro Asp Thr Leu Trp Gln	
922 927 932 937	
tgc cca tca tct cca tgg gag aag aga ctg gcc agc ccc tcg gag gag	2945
Cys Pro Ser Ser Pro Trp Glu Lys Arg Leu Ala Ser Pro Ser Glu Glu	
938 943 948 953	
acc tgg atc aca tgt gac aac aag ata aga ctt cag gaa gga ccc act	2993
Thr Trp Ile Thr Cys Asp Asn Lys Ile Arg Leu Gln Glu Gly Pro Thr	
954 959 964 969	
tcc tgt tct gga cgt gtg gag atc tgg cat gga ggt tcc tgg ggg aca	3041
Ser Cys Ser Gly Arg Val Glu Ile Trp His Gly Gly Ser Trp Gly Thr	
970 975 980 985	
gtg tgt gat gac tct tgg gac ttg gac gat gct cag gtg gtg tgt caa	3089
Val Cys Asp Asp Ser Trp Asp Leu Asp Asp Ala Gln Val Val Cys Gln	
986 991 996 1001	
caa ctt ggc tgt ggt cca gct ttg aaa gca ttc aaa gaa gca gag ttt	3137
Gln Leu Gly Cys Gly Pro Ala Leu Lys Ala Phe Lys Glu Ala Glu Phe	
1002 1007 1012 1017	

ggt cag ggg act gga ccg ata tgg ctc aat gaa gtg aag tgc aaa ggg	3185
Gly Gln Gly Thr Gly Pro Ile Trp Leu Asn Glu Val Lys Cys Lys Gly	
1018 1023 1028 1033	
aat gag tct tcc ttg tgg gat tgt cct gcc aga cgc tgg ggc cat agt	3233
Asn Glu Ser Ser Leu Trp Asp Cys Pro Ala Arg Arg Trp Gly His Ser	
1034 1039 1044 1049	
gag tgt ggg cac aag gaa gac gct gca gtg aat tgc aca gat att tca	3281
Glu Cys Gly His Lys Glu Asp Ala Ala Val Asn Cys Thr Asp Ile Ser	
1050 1055 1060 1065	
gtg cag aaa acc cca caa aaa gcc aca aca ggt cgc tca tcc cgt cag	3329
Val Gln Lys Thr Pro Gln Lys Ala Thr Thr Gly Arg Ser Ser Arg Gln	
1066 1071 1076 1081	
tca tcc ttt att gca gtc ggg atc ctt ggg gtt gtt ctg ttg gcc att	3377
Ser Ser Phe Ile Ala Val Gly Ile Leu Gly Val Val Leu Leu Ala Ile	
1082 1087 1092 1097	
ttc gtc gca tta ttc ttc ttg act aaa aag cga aga cag aga cag cgg	3425
Phe Val Ala Leu Phe Phe Leu Thr Lys Lys Arg Arg Gln Arg Gln Arg	
1098 1103 1108 1113	
ctt gca gtt tcc tca aga gga gag aac tta gtc cac caa att caa tac	3473
Leu Ala Val Ser Ser Arg Gly Glu Asn Leu Val His Gln Ile Gln Tyr	
1114 1119 1124 1129	
cgg gag atg aat tct tgc ctg aat gca gat gat ctg gac cta atg aat	3521
Arg Glu Met Asn Ser Cys Leu Asn Ala Asp Asp Leu Asp Leu Met Asn	
1130 1135 1140 1145	
tcc tca gga ggc cat tct gag cca cac tga a aaggaaaatg ggaatttata	3572
Ser Ser Gly Gly His Ser Glu Pro His *	
1146 1151	
accagtgag ttcagccttt aagatacctt gatgaagacc tggactattg aatggagcag	3632
aaattcacct ctctcactga ctattacagt tgcattttta tggagttctt cttctcctag	3692
gattcctaag actgctgctg aattttataaa aattaagttt gtgaatgtga ctacttagtg	3752
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 <213> Homo sapiens

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 <222> (218)..(1120)

<400> 539

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His Leu Gly Leu Pro Gln Trp Gln Tyr Ala Phe Thr Ser Tyr Gly Ile	
199 204 209 214	
agc cca cag gcc aag caa tgg ttc agc atg tat aaa cct atc acc tac	907
Ser Pro Gln Ala Lys Gln Trp Phe Ser Met Tyr Lys Pro Ile Thr Tyr	
215 220 225 230	
aac aca aac ctg ctc aca gaa gag acc gac tcc ttt gtg aat aag cta	955
Asn Thr Asn Leu Leu Thr Glu Glu Thr Asp Ser Phe Val Asn Lys Leu	
231 236 241 246	
gat ccc agc aaa gtg ttt aag agc aag aac aag atc gta atc cca aaa	1003
Asp Pro Ser Lys Val Phe Lys Ser Lys Asn Lys Ile Val Ile Pro Lys	
247 252 257 262	
aag aaa ggg cct gtg cag cct gca ggt ggc cag aaa ggg ccc tca gga	1051
Lys Lys Gly Pro Val Gln Pro Ala Gly Gly Gln Lys Gly Pro Ser Gly	
263 268 273 278	
ccc tcc ggt ccc tcc act tcc tcc act tct aaa tcc tcc tct ggc tct	1099
Pro Ser Gly Pro Ser Thr Ser Ser Thr Ser Lys Ser Ser Ser Gly Ser	
279 284 289 294	
gga aac ccc acc cgg aag tga gc acccctccct ccaactccct accagctcca	1152
Gly Asn Pro Thr Arg Lys *	
295 300	
gagtgggtgt ttccatgcac agatggccct aggggtgacc tccagttttg cgtgtggacc	1212
gtaggcctct ttctagtga atgacaaaaa ttgtaaggct tttagtcca cgcacattag	1272
ccaggctcgt agtgaggcct ccagagcagg ttgtgctgtc ccctgcctct ggaagcaatg	1332
gggaatttgg aatcttgtgt aagtgccaa ataagtctga gtgctttcct cttcttcaac	1392
actcaaccct caatccctta gcactgattg attagagagg tcccccaaag aaaccactgg	1452
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ctatttaaatt ttaaagtaaa ttgtatgaaa aattcatttc ttcaattgca ttagccacat	1572
tttgagtatt catgtggctg gtagattctg tattagcaca aagatatgga acatttccat	1632
caccacagaa agttctgttg gacagcactg cattagaata ttttcatact gctcttcctc	1692
aattaatttt tgttgttaat gttgatgtct tcattggatg ggtcataatg ttccatgaaa	1752
cctctcaagt acacaattgt atgttctttg tatcccttac cacaaatatc tcgctctgct	1812
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actaccgttc ccggcatgcc atgaaattgg cctcggcgct gaggcggggg ccggccctcc      180

acctgcctcc gccgcgcgcg aatcgcggtc gcgagcc atg gag gag gag gca tcg      235
                        Met Glu Glu Glu Ala Ser
                        1

tcc ccg ggg ctg ggc tgc agc aag ccg cac ctg gag aag ctg acc ctg      283
Ser Pro Gly Leu Gly Cys Ser Lys Pro His Leu Glu Lys Leu Thr Leu
      7                      12                      17                      22

ggc atc acg cgc atc cta gaa tct tcc cca ggt gtg act gag gtg acc      331
Gly Ile Thr Arg Ile Leu Glu Ser Ser Pro Gly Val Thr Glu Val Thr
      23                      28                      33                      38

atc ata gaa aag cct cct gct gaa cgt cat atg att tct tcc tgg gaa      379
Ile Ile Glu Lys Pro Pro Ala Glu Arg His Met Ile Ser Ser Trp Glu
      39                      44                      49                      54

caa aag aat aac tgt gtg atg cct gaa gat gtg aag aac ttt tac ctg      427
Gln Lys Asn Asn Cys Val Met Pro Glu Asp Val Lys Asn Phe Tyr Leu
      55                      60                      65                      70

atg acc aat ggc ttc cac atg aca tgg agt gtg aag ctg gat gcc agt      475
Met Thr Asn Gly Phe His Met Thr Trp Ser Val Lys Leu Asp Ala Ser
      71                      76                      81                      86

gat gat cag cca gag aag cct cac ttt gac tct cgc agt gtg ata ttt      523
Asp Asp Gln Pro Glu Lys Pro His Phe Asp Ser Arg Ser Val Ile Phe
      87                      92                      97                      102

gag ctg gat tca tgc aat ggc agt ggg aaa gtt tgc ctt gtc tac aaa      571
Glu Leu Asp Ser Cys Asn Gly Ser Gly Lys Val Cys Leu Val Tyr Lys
      103                      108                      113                      118

agt ggg aaa cca gca tta gca gaa gac act gag atc tgg ttc ctg gac      619
Ser Gly Lys Pro Ala Leu Ala Glu Asp Thr Glu Ile Trp Phe Leu Asp
      119                      124                      129                      134

aga gcg tta tac tgg cat ttt ctc aca gac acc ttt act gcc tat tac      667
Arg Ala Leu Tyr Trp His Phe Leu Thr Asp Thr Phe Thr Ala Tyr Tyr
      135                      140                      145 /                      150

cgc ctg ctc atc acc cac ctg ggc ctg ccc cag tgg caa tat gcc ttc      715
Arg Leu Leu Ile Thr His Leu Gly Leu Pro Gln Trp Gln Tyr Ala Phe

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151	156	161	166	
acc agc tat ggc att	agc cca cag gcc aag	caa tgg ttc agc atg tat		763
Thr Ser Tyr Gly Ile	Ser Pro Gln Ala Lys	Gln Trp Phe Ser Met Tyr		
167	172	177	182	
aaa cct atc acc tac	aac aca aac ctg ctc	aca gaa gag acc gac tcc		811
Lys Pro Ile Thr Tyr	Asn Thr Asn Leu Leu	Thr Glu Glu Thr Asp Ser		
183	188	193	198	
ttt gtg aat aag cta	gat ccc agc aaa gtg	ttt aag agc aag aac aag		859
Phe Val Asn Lys Leu	Asp Pro Ser Lys Val	Phe Lys Ser Lys Asn Lys		
199	204	209	214	
atc gta atc cca aaa	aag aaa ggg cct gtg	cag cct gca ggt ggc cag		907
Ile Val Ile Pro Lys	Lys Lys Gly Pro Val	Gln Pro Ala Gly Gly Gln		
215	220	225	230	
aaa ggg ccc tca gga	ccc tcc ggt ccc tcc	act tcc tcc act tct aaa		955
Lys Gly Pro Ser Gly	Pro Ser Gly Pro Ser	Thr Ser Ser Thr Ser Lys		
231	236	241	246	
tcc tcc tct ggc tct	gga aac ccc acc cgg	aag tga gcac cccctccctcc		1005
Ser Ser Ser Gly Ser	Gly Asn Pro Thr Arg	Lys *		
247	252	257		
aactccctac cagctccaga	gtgggtggttt ccatgcacag	atggccctag ggggtgacctc		1065
cagttttgcg tgtggaccgt	aggcctcttt ctagtgaat	gacccaaaatt gtaaggcttt		1125
tagtcccacc gacattagcc	aggctcgtag tgaggcctcc	agagcagggt gtgctgtccc		1185
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gctttcctct tcttcaacac	tcaaccctca atcccttagc	actgattgat tagagaggtc		1305
ccccaaagaa accactgggt	ttgacccatg aagcattaga	actgcattgt tcattcagga		1365
gccactagtc acatatgact	atttaaattt aaagtaaatt	gtatgaaaaa ttcatttctt		1425
caattgcatt agccacattt	tgagtattca tgtggctggg	agattctgta ttagcacaaa		1485
gatatggaac atttccatca	ccacagaaaag ttctgttgga	cagcactgca ttagaatatt		1545
ttcactactgc tcttcctcaa	ttaatttttg ttgttaattg	tgatgtcttc attggatggg		1605
tcataatggt ccatgaaacc	tctcaagtac acaattgtat	gttctttgta tcccttacca		1665
caaatatctc gctctgctca	tttcttttgc agcttctat	aaagtttgtc ttcctcatca		1725
aaaaaaaaa a				1736

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<212> DNA
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ctggcaaagc cgagccgcag cattttatatt cgttcgtggt ttccgcacag gctggagttt      120
cgtgggttgg gtcgtacttg ggacctcggc gaagaggacc cgtttatttt tttttctttc      180
caaa atg gca gcc tcc agt cgc gca caa gtg tta tct ctg tac cgg gcg      229
Met Ala Ala Ser Ser Arg Ala Gln Val Leu Ser Leu Tyr Arg Ala
   1             5             10

atg ctg aga gag agc aag cgt ttc agc gcc tac aat tac aga aca tat      277
Met Leu Arg Glu Ser Lys Arg Phe Ser Ala Tyr Asn Tyr Arg Thr Tyr
  16             21             26             31

gct gtc agg agg ata aga gat gcc ttc aga gaa aat aaa aat gta aag      325
Ala Val Arg Arg Ile Arg Asp Ala Phe Arg Glu Asn Lys Asn Val Lys
  32             37             42             47

gat cct gta gaa att caa acc cta gtg aat aaa gcc aag aga gac ctt      373
Asp Pro Val Glu Ile Gln Thr Leu Val Asn Lys Ala Lys Arg Asp Leu
  48             53             58             63

gga gta att cgt cga cag gtc cac att ggc caa ctg tat tca act gac      421
Gly Val Ile Arg Arg Gln Val His Ile Gly Gln Leu Tyr Ser Thr Asp
  64             69             74             79

aag ctg atc att gag aat cga gac atg ccc agg acc tag caagccgggg      470
Lys Leu Ile Ile Glu Asn Arg Asp Met Pro Arg Thr *
  80             85             90

accagccacc agtggcggcc agggaccacc ttcagcatcc actctctgtt tgagctgggg      530

gctcccaaaa ccagcttaca atagcctttt gcg      563
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Pro Leu Gly Ala Gly Gln Asp Val Gly Arg Ser Cys Ile Leu Val Ser	
8 13 18 23	
att gcg ggc aag aat gtc atg ctg gac tgt gga atg cac atg ggc ttc	149
Ile Ala Gly Lys Asn Val Met Leu Asp Cys Gly Met His Met Gly Phe	
24 29 34 39	
aat gac gac cga cgc ttc cct gac ttc tcc tac atc acc cag aac ggc	197
Asn Asp Asp Arg Arg Phe Pro Asp Phe Ser Tyr Ile Thr Gln Asn Gly	
40 45 50 55	
cgc cta aca gac ttc ctg gac tgt gtg atc att agc cac ttc cac ctg	245
Arg Leu Thr Asp Phe Leu Asp Cys Val Ile Ile Ser His Phe His Leu	
56 61 66 71	
gac cac tgc ggg gca ctc ccc tac ttc agc gag atg gtg ggc tac gac	293
Asp His Cys Gly Ala Leu Pro Tyr Phe Ser Glu Met Val Gly Tyr Asp	
72 77 82 87	
ggc ccc atc tac atg act cac ccc acc cag gcc atc tgc ccc atc ttg	341
Gly Pro Ile Tyr Met Thr His Pro Thr Gln Ala Ile Cys Pro Ile Leu	
88 93 98 103	
ctg gag gac tac cgc aag atc gcc gta gac aag aag ggc gag gcc aac	389
Leu Glu Asp Tyr Arg Lys Ile Ala Val Asp Lys Lys Gly Glu Ala Asn	
104 109 114 119	
ttc ttc acc tcc cag atg atc aaa gac tgc atg aag aag gtg gtg gct	437
Phe Phe Thr Ser Gln Met Ile Lys Asp Cys Met Lys Lys Val Val Ala	
120 125 130 135	
gtc cac ctc cac cag acg gtc cag gta gat gat gag ctg gag atc aag	485
Val His Leu His Gln Thr Val Gln Val Asp Asp Glu Leu Glu Ile Lys	
136 141 146 151	
gcc tac tat gca ggc cac gtg ctg ggg gca gcc atg ttc cag att aaa	533
Ala Tyr Tyr Ala Gly His Val Leu Gly Ala Ala Met Phe Gln Ile Lys	
152 157 162 167	
gtg ggc tca gag tct gtg gtc tac acg ggt gat tat aac atg acc cca	581
Val Gly Ser Glu Ser Val Val Tyr Thr Gly Asp Tyr Asn Met Thr Pro	
168 173 178 183	
gac cga cac tta gga gct gcc tgg att gac aag tgc cgc ccc aac ctg	629
Asp Arg His Leu Gly Ala Ala Trp Ile Asp Lys Cys Arg Pro Asn Leu	
184 189 194 199	
ctc atc aca gag tcc acg tac gcc acg acc atc cgt gac tcc aag cgc	677
Leu Ile Thr Glu Ser Thr Tyr Ala Thr Thr Ile Arg Asp Ser Lys Arg	
200 205 210 215	
tgc cgg gag cga gac ttc ctg aag aaa gtc cac gag acc gtg gag cgt	725
Cys Arg Glu Arg Asp Phe Leu Lys Lys Val His Glu Thr Val Glu Arg	
216 221 226 231	

atc tcg ctg ggg ctg ctg aag cgg gag atg gcg cag ggg ctg ctc cct	1445
Ile Ser Leu Gly Leu Leu Lys Arg Glu Met Ala Gln Gly Leu Leu Pro	
456 461 466 471	
 gag gcc aag aag cct cgg ctc ctg cac ggc acc ctg atc atg aag gac	1493
Glu Ala Lys Lys Pro Arg Leu Leu His Gly Thr Leu Ile Met Lys Asp	
472 477 482 487	
 agc aac ttc cgg ctg gtg tcc tca gag caa gcc ctc aaa gag ctg ggt	1541
Ser Asn Phe Arg Leu Val Ser Ser Glu Gln Ala Leu Lys Glu Leu Gly	
488 493 498 503	
 ctg gct gag cac cag ctg cgc ttc acc tgc cgc gtg cac ctg cat gac	1589
Leu Ala Glu His Gln Leu Arg Phe Thr Cys Arg Val His Leu His Asp	
504 509 514 519	
 aca cgc aag gag cag gag acg gca ttg cgc gtc tac agc cac ctc aag	1637
Thr Arg Lys Glu Gln Glu Thr Ala Leu Arg Val Tyr Ser His Leu Lys	
520 525 530 535	
 agc gtc ctg aag gac cac tgt gtg cag cac ctc cca gac ggc tct gtg	1685
Ser Val Leu Lys Asp His Cys Val Gln His Leu Pro Asp Gly Ser Val	
536 541 546 551	
 act gtg gag tcc gtc ctc ctc cag gcc gcc gcc cct tct gag gac cca	1733
Thr Val Glu Ser Val Leu Leu Gln Ala Ala Ala Pro Ser Glu Asp Pro	
552 557 562 567	
 ggc acc aag gtg ctg ctg gtc tcc tgg acc tac cag gac gag gag ctg	1781
Gly Thr Lys Val Leu Leu Val Ser Trp Thr Tyr Gln Asp Glu Glu Leu	
568 573 578 583	
 ggg agc ttc ctc aca tct ctg ctg aag aag ggc ctc ccc cag gcc ccc	1829
Gly Ser Phe Leu Thr Ser Leu Leu Lys Lys Gly Leu Pro Gln Ala Pro	
584 589 594 599	
 agc tga ggccggcaac tcaccagcc gccacctctg ccctctccca gctggacaga	1885
Ser *	
600	
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ccctggggac agaggccttg tgtcacctgc ctgcccaggc agctgtttgc agctgaagaa	2005
acaaactggt ctccaggctg tcttgccctt attcctgggt agggcaggtg gtcctagaca	2065
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 <213> Homo sapiens

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<221> CDS

<222> (40)..(453)

<400> 543

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ArgValArgLysLeuGlySerSerArgAlaAlaLeuLeuLeuLeuAsn
6111621

tcgcggccgcgtcga cca aaa atg gcg gta gtt ggt gtg tcc tcg gtt150
SerArgProArgArgProLysMetAlaValValGlyValSerSerVal
22273237

tctcggctgctgggtcgg tcc cgc cca cag ctg ggg cgg cct atg tcg198
SerArgLeuLeuGlyArgSerArgProGlnLeuGlyArgProMetSer
38434853

agtggcgcc catggcgaa gagggc tca gct cgc atg tgg aag act ctc246
SerGlyAlaHisGlyGluGluGlySerAlaArgMetTrpLysThrLeu
54596469

accttc ttc gtc gcg ctc ccc ggg gtg gca gtc agc atg ctg aat gtg294
ThrPhePheValAlaLeuProGlyValAlaValSerMetLeuAsnVal
70758085

tactctg aagtcgcac cac gga gag cac gag aga ccc gag ttc atc gcc342
TyrLeuLysSerHisHisGlyGluHisGluArgProGluPheIleAla
869196101

tacccc catctccgc atc agg acc aag ccg ttt ccc tgg gga gat ggt390
TyrProHisLeuArgIleArgThrLysProPheProTrpGlyAspGly
102107112117

aac cat act cta ttc cat aac cct cat gtg aat cca ctt cca act ggc438
AsnHisThrLeuPheHisAsnProHisValAsnProLeuProThrGly
118123128133

tacgaa gatgaa taa agagaatctg gaccactacc cgggcaccag ggaccacagc493
TyrGluAspGlu*
134

actggtttgg accgttactc tgcacatgga ccagaaaaag tatatgggac cttaagctca553

ccttcttttac ttgtatcaaaa tgatgactgg tatactgggtc tcccatccct ttgcttgtgg613

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<210> 544

<211> 1505

<212> DNA

<213> Homo sapiens

<220>
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 <222> (72)..(1208)

<400> 544

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Met Glu Val Lys Pro Pro Pro Gly Arg Pro Gln Pro Asp	
1 5 10	
tcc ggc cgt cgc cgt cgc cgc cgg ggg gag gag ggc cat gat cca aag	158
Ser Gly Arg Arg Arg Arg Arg Arg Gly Glu Glu Gly His Asp Pro Lys	
14 19 24 29	
gaa cca gag cag ttg aga aaa ctg ttt att ggt ggt ctg agc ttt gaa	206
Glu Pro Glu Gln Leu Arg Lys Leu Phe Ile Gly Gly Leu Ser Phe Glu	
30 35 40 45	
act aca gat gat agt tta cga gaa cat ttt gag aaa tgg ggc aca ctc	254
Thr Thr Asp Asp Ser Leu Arg Glu His Phe Glu Lys Trp Gly Thr Leu	
46 51 56 61	
aca gat tgt gtg gta atg aga gac ccc caa aca aaa cgt tcc agg ggc	302
Thr Asp Cys Val Val Met Arg Asp Pro Gln Thr Lys Arg Ser Arg Gly	
62 67 72 77	
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Phe Gly Phe Val Thr Tyr Ser Cys Val Glu Glu Val Asp Ala Ala Met	
78 83 88 93	
tgt gct cga cca cac aag gtt gat ggg cgt gta gtg gaa cca aag aga	398
Cys Ala Arg Pro His Lys Val Asp Gly Arg Val Val Glu Pro Lys Arg	
94 99 104 109	
gct gtt tct aga gag gat tct gta aag cct ggt gcc cat cta aca gtg	446
Ala Val Ser Arg Glu Asp Ser Val Lys Pro Gly Ala His Leu Thr Val	
110 115 120 125	
aag aaa att ttt gtt ggt ggt att aaa gaa gat aca gaa gaa tat aat	494
Lys Lys Ile Phe Val Gly Gly Ile Lys Glu Asp Thr Glu Glu Tyr Asn	
126 131 136 141	
ttg aga gac tac ttt gaa aag tat ggc aag att gaa acc ata gaa gtt	542
Leu Arg Asp Tyr Phe Glu Lys Tyr Gly Lys Ile Glu Thr Ile Glu Val	
142 147 152 157	
atg gaa gac agg cag agt gga aaa aag aga gga ttt gct ttt gta act	590
Met Glu Asp Arg Gln Ser Gly Lys Lys Arg Gly Phe Ala Phe Val Thr	
158 163 168 173	
/ ttt gat gat cat gat aca gtt gat aaa att gtt gtt cag aaa tac cac	638
/ Phe Asp Asp His Asp Thr Val Asp Lys Ile Val Val Gln Lys Tyr His	
174 179 184 189	
act att aat ggg cat aat tgt gaa gtg aaa aag gcc ctt tct aaa caa	686

Thr	Ile	Asn	Gly	His	Asn	Cys	Glu	Val	Lys	Lys	Ala	Leu	Ser	Lys	Gln	
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Glu	Met	Gln	Ser	Ala	Gly	Ser	Gln	Arg	Gly	Arg	Gly	Gly	Gly	Ser	Gly	
206					211					216					221	
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Asn	Phe	Met	Gly	Arg	Gly	Gly	Asn	Phe	Gly	Gly	Gly	Gly	Gly	Asn	Phe	
222					227					232					237	
ggc cgt ggt gga aac ttt ggt gga aga gga ggc tat ggt ggt gga ggt																830
Gly	Arg	Gly	Gly	Asn	Phe	Gly	Gly	Arg	Gly	Gly	Tyr	Gly	Gly	Gly	Gly	
238					243					248					253	
ggg ggc agc aga ggt agt tat gga gga ggt gat ggt gga tat aat gga																878
Gly	Gly	Ser	Arg	Gly	Ser	Tyr	Gly	Gly	Gly	Asp	Gly	Gly	Tyr	Asn	Gly	
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Phe	Gly	Gly	Asp	Gly	Gly	Asn	Tyr	Gly	Gly	Gly	Pro	Gly	Tyr	Ser	Ser	
270					275					280					285	
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Arg	Gly	Gly	Tyr	Gly	Gly	Gly	Gly	Pro	Gly	Tyr	Gly	Asn	Gln	Gly	Gly	
286					291					296					301	
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302					307					312					317	
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Phe	Gly	Gly	Gly	Asn	Tyr	Gly	Gly	Gly	Gly	Asn	Tyr	Asn	Asp	Phe	Gly	
318					323					328					333	
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Asn	Tyr	Ser	Gly	Gln	Gln	Gln	Ser	Asn	Tyr	Gly	Pro	Met	Lys	Gly	Gly	
334					339					344					349	
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Ser	Phe	Gly	Gly	Arg	Ser	Ser	Gly	Ser	Pro	Tyr	Gly	Gly	Gly	Tyr	Gly	
350					355					360					365	
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Ser	Gly	Gly	Gly	Ser	Gly	Gly	Tyr	Gly	Ser	Arg	Arg	Phe	*			
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gatgtcaatc ctgaggcttt tatctgttgt gcttgccttt tcctttcctt																1505


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atagatgtaa tttatagata gatcagttgc tatattttct ggtgtagggg ctttcttatt 743
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tgatccactt gagcggtaa gtgctgccaa ttgtacaata tgcccaggct tgcagaataa 923
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caaactctgc tttctgtaac caatcagtgt tttaatgttt gtgtgttctt cataaaattt 1223
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<210> 546
<211> 1288
<212> DNA
<213> Homo sapiens

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<220>
<221> CDS
<222> (95)..(928)

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cgcggggacc cgatgcgcgg gagcggaggc cgag      atg gct tcg gcg gga ggc 112
                                   Met Ala Ser Ala Gly Gly
                                   1

gaa gac tgc gag agc ccc gcg ccg gag gcc gac cgt ccg cac cag cgg 160
Glu Asp Cys Glu Ser Pro Ala Pro Glu Ala Asp Arg Pro His Gln Arg
 7              12              17              22

ccc ttc ctg ata ggg gtg agc ggc ggc act gcc agc ggg aag tcg acc 208
Pro Phe Leu Ile Gly Val Ser Gly Gly Thr Ala Ser Gly Lys Ser Thr
23              28              33              38

|

gtg tgt gag aag atc atg gag ttg ctg gga cag aac gag gtg gaa cag 256
Val Cys Glu Lys Ile Met Glu Leu Leu Gly Gln Asn Glu Val Glu Gln
39              44              49              54

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cgg cag cgg aag gtg gtc atc ctg agc cag gac agg ttc tac aag gtc	304
Arg Gln Arg Lys Val Val Ile Leu Ser Gln Asp Arg Phe Tyr Lys Val	
55 60 65 70	
ctg acg gca gag cag aag gcc aag gcc ttg aaa gga cag tac aat ttt	352
Leu Thr Ala Glu Gln Lys Ala Lys Ala Leu Lys Gly Gln Tyr Asn Phe	
71 76 81 86	
gac cat cca gat gcc ttt gat aat gat ttg atg cac agg act ctg aag	400
Asp His Pro Asp Ala Phe Asp Asn Asp Leu Met His Arg Thr Leu Lys	
87 92 97 102	
aac atc gtg gag ggc aaa acg gtg gag gtg ccg ace tat gat ttt gtg	448
Asn Ile Val Glu Gly Lys Thr Val Glu Val Pro Thr Tyr Asp Phe Val	
103 108 113 118	
aca cac tca agg tta cca gag acc acg gtg gtc tac cct gcg gac gtg	496
Thr His Ser Arg Leu Pro Glu Thr Thr Val Val Tyr Pro Ala Asp Val	
119 124 129 134	
gtt ctg ttt gag ggc atc ttg gtg ttc tac agc cag gag atc cgg gac	544
Val Leu Phe Glu Gly Ile Leu Val Phe Tyr Ser Gln Glu Ile Arg Asp	
135 140 145 150	
atg ttc cac ctg cgc ctc ttc gtg gac acc gac tcc gac gtc agg ctg	592
Met Phe His Leu Arg Leu Phe Val Asp Thr Asp Ser Asp Val Arg Leu	
151 156 161 166	
tct cga aga gtt ctc cgg gac gtg cgc cga ggg agg gac ctg gag cag	640
Ser Arg Arg Val Leu Arg Asp Val Arg Arg Gly Arg Asp Leu Glu Gln	
167 172 177 182	
att ctg acg cag tac acc acc ttc gtg aag ccg gcc ttc gag gag ttc	688
Ile Leu Thr Gln Tyr Thr Thr Phe Val Lys Pro Ala Phe Glu Glu Phe	
183 188 193 198	
tgc ctg ccg aca aag aag tat gcc gat gtg atc atc cca cga gga gtg	736
Cys Leu Pro Thr Lys Lys Tyr Ala Asp Val Ile Ile Pro Arg Gly Val	
199 204 209 214	
gac aat atg gtt gcc atc aac ctg atc gtg cag cac atc cag gac att	784
Asp Asn Met Val Ala Ile Asn Leu Ile Val Gln His Ile Gln Asp Ile	
215 220 225 230	
ctg aat ggt gac atc tgc aaa tgg cac cga gga ggg tcc aat ggg cgg	832
Leu Asn Gly Asp Ile Cys Lys Trp His Arg Gly Gly Ser Asn Gly Arg	
231 236 241 246	
agc tac aag cgg acc ttt tct gag cca ggg gac cac cct ggg atg ctg	880
Ser Tyr Lys Arg Thr Phe Ser Glu Pro Gly Asp His Pro Gly Met Leu	
247 252 257 262	
acc tct ggc aaa cgg tca cat ttg gag tcc agc agc aga ccc cac tga	928
Thr Ser Gly Lys Arg Ser His Leu Glu Ser Ser Ser Arg Pro His *	
263 268 273 278	
ggggctgccg agcctcaggg caggtctccc gcccgcatg tgtgttcagg aactgagcct	988

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ggggacgccc acccacaccc actgctatgt ggagctcaca gcctcacatg tgaacacccg 1048
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gcagacgtga cgtgggggaa gggggctgag ccctgtggct gggttctgac aactgtaacg 1228
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<210> 547
<211> 2670
<212> DNA
<213> Homo sapiens

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<220>
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<222> (107) .. (634)

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Met Ser Cys
1
aca att gag aag gca ctt gcc gac gct aaa gct ctt gtt gaa aga tta 163
Thr Ile Glu Lys Ala Leu Ala Asp Ala Lys Ala Leu Val Glu Arg Leu
4 9 14 19
aga gat cat gac gat gca gca gaa tct ctg att gag caa acc aca gct 211
Arg Asp His Asp Asp Ala Ala Glu Ser Leu Ile Glu Gln Thr Thr Ala
20 25 30 35
ctc aac aag cga gta gaa gcc atg aaa cag tat cag gaa gaa att caa 259
Leu Asn Lys Arg Val Glu Ala Met Lys Gln Tyr Gln Glu Glu Ile Gln
36 41 46 51
gaa ctt aat gaa gtc gcg aga cat cgg cca cgg tcc acg tta gtt atg 307
Glu Leu Asn Glu Val Ala Arg His Arg Pro Arg Ser Thr Leu Val Met
52 57 62 67
gga atc cag caa gaa aac aga caa atc aga gag ttg caa caa gaa aac 355
Gly Ile Gln Gln Glu Asn Arg Gln Ile Arg Glu Leu Gln Gln Glu Asn
68 73 78 83
aaa gaa tta cgt aca tct ctg gaa gaa cat cag tcg gcc ttg gaa ctt 403
Lys Glu Leu Arg Thr Ser Leu Glu Glu His Gln Ser Ala Leu Glu Leu
84 89 94 99
ata atg agc aag tac cga gaa caa atg ttt aga ttg cta atg gct agc / 451
Ile Met Ser Lys Tyr Arg Glu Gln Met Phe Arg Leu Leu Met Ala Ser
100 105 110 115

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aaa aaa gat gat ccg ggt ata ata atg aag tta aaa gag cag cac tcc	499
Lys Lys Asp Asp Pro Gly Ile Ile Met Lys Leu Lys Glu Gln His Ser	
116 121 126 131	
aag gaa ctg caa gca cat gtt gac cag ata act gaa atg gca gca gta	547
Lys Glu Leu Gln Ala His Val Asp Gln Ile Thr Glu Met Ala Ala Val	
132 137 142 147	
atg agg aag cca ttg aaa ttg acg agc aac agg gtt gca agg aac aag	595
Met Arg Lys Pro Leu Lys Leu Thr Ser Asn Arg Val Ala Arg Asn Lys	
148 153 158 163	
aac gaa tat ttc aac ttg aac aag aaa aca aag gct tga gagagatcct	644
Asn Glu Tyr Phe Asn Leu Asn Lys Lys Thr Lys Ala *	
164 169 174	
tcaaataact cgagaatcat ttttgaacct aaggaaagat gatgcgtcgg aaagtacttc	704
tttgtcagca ttagtgacca acagtgattt gagtctgagg aagagctgaa gagtttctga	764
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aacaaaaaat gcatagttaa tggctcataga ctttattcca aacataatt ggaaaataga	944
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ccaagagctt ttggcagtac tgctggcttt ctgggtgatt aattaggtaa acttgaatat	1064
tcccagtaaa tgtttgagaa tgcataaaat tataccaatt taaaaatata aatttttgcc	1124
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tcaaatatat aatatgtaat ttttttaaaa accaccagat acagaaatgt gctttaacat	1904
cagttgaaac cttaaattttc ttatgttggtg gtgattgtat taaaaagggg taaaagaaga	1964
gtgtcaaaca tgggttaaata tattgtactc atttatgttg aatacgtatt aaaattaaga	2024
caagtggaaa attatacttt gagtatataa tttgttaaatt attactttat atggtaattt	2084
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tttttttttt tttttgggtg ttgttaaaca gaaccttaag tttatgtttg aggtatgtac	2624
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 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (365) .. (916)

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agaaggaaga gctgaacgtt tagaggcaac agaatacctt gtctcagctg ctgaagctgg	360
agcc atg acc ctc tgc att aca aac cca tta tgg gta aca aaa act cgc	409
Met Thr Leu Cys Ile Thr Asn Pro Leu Trp Val Thr Lys Thr Arg	
1 5 10	

ctt atg tta cag tat gat gct gtt gtt aac tcc cca cac cga caa tat	457
Leu Met Leu Gln Tyr Asp Ala Val Val Asn Ser Pro His Arg Gln Tyr	
16 21 26 31	
aaa gga atg ttt gat aca ctt gtg aaa ata tat aag tat gaa ggt gtg	505
Lys Gly Met Phe Asp Thr Leu Val Lys Ile Tyr Lys Tyr Glu Gly Val	
32 37 42 47	
cgt gga tta tat aag gga ttt gtt cct ggg ctg ttt gga aca tcg cat	553
Arg Gly Leu Tyr Lys Gly Phe Val Pro Gly Leu Phe Gly Thr Ser His	
48 53 58 63	
ggg gcc ctt cag ttt atg gca tat gaa ttg ctg aag ttg aag tac aac	601
Gly Ala Leu Gln Phe Met Ala Tyr Glu Leu Leu Lys Leu Lys Tyr Asn	
64 69 74 79	
cag cat atc aat aga tta cca gaa gcc cag ttg agc aca gta gaa tat	649
Gln His Ile Asn Arg Leu Pro Glu Ala Gln Leu Ser Thr Val Glu Tyr	
80 85 90 95	
ata tct gtt gca gca cta tcc aaa ata ttt gct gtc gca gca aca tac	697
Ile Ser Val Ala Ala Leu Ser Lys Ile Phe Ala Val Ala Ala Thr Tyr	
96 101 106 111	
cca tat caa gtc gta aga gct cgt ctt cag gat caa cac atg ttt tac	745
Pro Tyr Gln Val Val Arg Ala Arg Leu Gln Asp Gln His Met Phe Tyr	
112 117 122 127	
agt ggt gta ata gat gta atc aca aag aca tgg agg aaa gaa ggc gtc	793
Ser Gly Val Ile Asp Val Ile Thr Lys Thr Trp Arg Lys Glu Gly Val	
128 133 138 143	
ggg gga ttt tac aag gga att gct cct aat ttg att aga gtg act cca	841
Gly Gly Phe Tyr Lys Gly Ile Ala Pro Asn Leu Ile Arg Val Thr Pro	
144 149 154 159	
gcc tgc tgt att acc ttt gtg gta tat gaa aac gtc tca cat ttt tta	889
Ala Cys Cys Ile Thr Phe Val Val Tyr Glu Asn Val Ser His Phe Leu	
160 165 170 175	
ctt gac ctt aga gaa aag aga aag taa gctca aagaggacaa ttccagtata	941
Leu Asp Leu Arg Glu Lys Arg Lys *	
176 181	
tctgcccaag gcagcaacaa gctcttttgt gtttaaggca taaaagaaga attctgcata	1001
gaaacatggc tcatattcga aattgctcta tagtcattag aagccagaga actgctaagt	1061
ctcctgcaat gtttttctgc tttttgcctt ccccatatat atggaacttg gctacctctg	1121
cctgaaatgg ctgccatcaa cacaatgtta aaactgacac gaagtataga gtttcacaga	1181
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tacttctttt tgtgagctta cttgcctgga ttgctttaaa attaaccttt gtgcaatacc	1301
aagaaaatag ctcttttaaaa gaatgtcttt gtatgtctca aggtaaatta aggatttact	1361

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gaataagggtg ttgaccaaatt ccagaccatt ttatttttatt tttttattta tttatttttt 1421
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caacctccac ctcccgggtt caccgcatc tcctgcctca gcctcctgag tagctgggac 1541
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tcccaaagtg ctgggattac aggcgtgagc cactgcgcct ggccagacca ttttagaatt 1721
gggaaattgt agtgagaaaa aatgcactgt aaatatgctt tat 1764

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<210> 549
<211> 2482
<212> DNA
<213> Homo sapiens

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<221> CDS
<222> (50)..(2164)

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1

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Arg Glu Leu Arg Ala Leu Leu Leu Trp Gly Arg Arg Leu Arg Pro Leu
3 8 13 18

ctg cgg gcg ccg gcg ctg gcg gcc gtg ccg gga gga aaa cca att ctg 151
Leu Arg Ala Pro Ala Leu Ala Ala Val Pro Gly Gly Lys Pro Ile Leu
19 24 29 34

tgt cct cgg agg acc aca gcc cag ttg ggc ccc agg cga aac cca gcc 199
Cys Pro Arg Arg Thr Thr Ala Gln Leu Gly Pro Arg Arg Asn Pro Ala
35 40 45 50

tgg agc ttg cag gca gga cga ctg ttc agc acg cag acc gcc gag gac 247
Trp Ser Leu Gln Ala Gly Arg Leu Phe Ser Thr Gln Thr Ala Glu Asp
51 56 61 66

aag gag gaa ccc ctg cac tcg att atc agc agc aca gag agc gtg cag 295
Lys Glu Glu Pro Leu His Ser Ile Ile Ser Ser Thr Glu Ser Val Gln
67 72 77 82

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gac att gtt gcc cgg tcc ctg tac tca gaa aaa gag gtg ttt ata cgg 391

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Val Ser Arg Glu Leu Gly Ser Ser Val Ala Leu Tyr Ser Arg Lys Val				
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Leu Ile Gln Thr Lys Ala Thr Asp Ile Leu Pro Lys Trp Leu Arg Phe				
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Ile Arg Gly Val Val Asp Ser Glu Asp Ile Pro Leu Asn Leu Ser Arg				
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Gln Gln Arg Leu Ile Lys Phe Phe Ile Asp Gln Ser Lys Lys Asp Ala				
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Tyr Leu Cys Ala Pro Asn Arg His Leu Ala Glu His Ser Pro Tyr Tyr				
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His Asn Val Gly Leu Leu Ala His Asp Gly Gln Val Asn Glu Asp Gly
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Gln Pro Asp Leu Gly Lys Ala Arg Asp Tyr Tyr Thr Arg Ala Cys Asp
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ggg ggc tat act tcc agt tgc ttc aac ctc agt gcc atg ttc ctg cag      540
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gacacactca ggagagtaac tttgctttgt tacaagcttt agttgaggct gcataacttg	2732
ttcgtgaaga tataacagag gcagacagaa tccagagggc tacagagaac ctgaattcaa	2792
cccatgtgtc cccaagagat tcagagaaaa gaggtcaatg tttagggaac agagatgcca	2852
gttgagggga gggcattacc tgggctattg gggaaatgtg gtctctttcc tactgagcac	2912
atattcttgt tgtattttgt ccaggctgtg ctttctaagg actgctctta gccagtgact	2972
gcagagcagg gataccaagg caggcctgtt acactctccc caacctcctt ggactgcaaa	3032
caatctagga cacctccacc aaacctctc ttgcactttc cctctggctt ccctcccagc	3092
cttccttgggt ttggatgttt tgtcccctcc ttaatttatg ttgaaactct acataaactg	3152
tttactgttg aaacagtgtg agtattagga ggtgggacct ttgggaagtg attaatgcaa	3212
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caaaagatgc agcatgaagg catcatcttg gaaacagaca tgagccctca acagacaact	3392
gcacctactg atgttttgat gttgaacttc ccagcctcca gaactctggg aaaataaagt	3452
cctctttata catttcctag tcagtggat tttattataa cagctcaaata agactaagta	3512
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aaaaaaaaa	3582

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 <222> (268) .. (426)

<400> 553

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cgccgcttct tccgctttct cgtcaggctc ctgcaacccc aggcattgaac caaggtttct    180
gaactactgg gcgggagcca acgtctcttc tttctcccg cctggcgagg gctttgtcgc      240
tgccggctgg gccccagggt gtcccc      atg gcg ggg ccg cgg gtg gag gtc      291
                                   Met Ala Gly Pro Arg Val Glu Val
                                   1               5

gat ggc agc atc atg gaa ggg ggc ggc cag atc ctg aga gtc tct acg      339
Asp Gly Ser Ile Met Glu Gly Gly Gly Gln Ile Leu Arg Val Ser Thr
  9               14               19               24

gcc ttg agc tgt ctc cta ggc ctc ccc ttg cgg gtg cag aag atc cga      387
Ala Leu Ser Cys Leu Leu Gly Leu Pro Leu Arg Val Gln Lys Ile Arg
  25               30               35               40

gcc ggc cgg agc acg cca ggc ctg agt att atg acc tga aggcctcaac      436
Ala Gly Arg Ser Thr Pro Gly Leu Ser Ile Met Thr *
  41               46               51

atttatctgg actggaaatg attcgagatt tgtgtgatgg gcaactggag ggggcagaaa    496
ttggctcaac agaaataacc ttacaccag agaagatcaa aggtggaatc ca      548
  
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 <213> Homo sapiens

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 <222> (408) .. (2120)

<400> 554

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tcccgggggtt cttegcgcgc ggcccccttc gcgtgggtga gtgaatgtga gagtcagcgc    120
tcgcgcgcgc cgcgccgcc gcctccgctg ttcggcgctc tgctttaggc ggtgggggggc    180
  
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gggcgcgcgc gtaaaagcat agagacgggc attgagctct tgggctagag cgtcgccgag 240
tcggagccgg agcctgagcc gcgcgtgtg tctccgtgc gtccgccgag gccccgagt 300
gtcagggaca aaagcctccg cctgctcccg cagccggggc tcctctgccg ccgccgccgc 360
gctgaggaga gttcgccgcc gtcgccgcc gtaggatct gagagcc atg tcg gcc 416
                                     Met Ser Ala
                                     1

agc agc ctc ttg gag cag aga cca aaa ggt caa gga aac aaa gta caa 464
Ser Ser Leu Leu Glu Gln Arg Pro Lys Gly Gln Gly Asn Lys Val Gln
  4                      9                      14          19

aat gga tct gta cat caa aag gat gga tta aac gat gat gat ttt gaa 512
Asn Gly Ser Val His Gln Lys Asp Gly Leu Asn Asp Asp Asp Phe Glu
 20                      25                      30          35

cct tac ttg agt cca cag gca agg ccc aat aat gca tat act gcc atg 560
Pro Tyr Leu Ser Pro Gln Ala Arg Pro Asn Asn Ala Tyr Thr Ala Met
 36                      41                      46          51

tca gat tcc tac tta ccc agt tac tac agt ccc tcc att ggc ttc tcc 608
Ser Asp Ser Tyr Leu Pro Ser Tyr Tyr Ser Pro Ser Ile Gly Phe Ser
 52                      57                      62          67

tat tct ttg ggt gaa gct gct tgg tct acg ggg ggt gac aca gcc atg 656
Tyr Ser Leu Gly Glu Ala Ala Trp Ser Thr Gly Gly Asp Thr Ala Met
 68                      73                      78          83

ccc tac tta act tct tat gga cag ctg agc aac gga gag ccc cac ttc 704
Pro Tyr Leu Thr Ser Tyr Gly Gln Leu Ser Asn Gly Glu Pro His Phe
 84                      89                      94          99

cta cca gat gca atg ttt ggg caa cca gga gcc cta ggt agc act cca 752
Leu Pro Asp Ala Met Phe Gly Gln Pro Gly Ala Leu Gly Ser Thr Pro
100                      105                      110          115

ttt ctt ggt cag cat ggt ttt aat ttc ttt ccc agt ggg att gac ttc 800
Phe Leu Gly Gln His Gly Phe Asn Phe Phe Pro Ser Gly Ile Asp Phe
116                      121                      126          131

tca gca tgg gga aat aac agt tct cag gga cag tct act cag agc tct 848
Ser Ala Trp Gly Asn Asn Ser Ser Gln Gly Gln Ser Thr Gln Ser Ser
132                      137                      142          147

gga tat agt agc aat tat gct tat gca cct agc tcc tta ggt gga gcc 896
Gly Tyr Ser Ser Asn Tyr Ala Tyr Ala Pro Ser Ser Leu Gly Gly Ala
148                      153                      158          163

atg att gat gga cag tca gct ttt gcc aat gag acc ctc aat aag gct 944
Met Ile Asp Gly Gln Ser Ala Phe Ala Asn Glu Thr Leu Asn Lys Ala
164                      169                      174          179

cct ggc atg aat act ata gac caa ggg atg gca gca ctg aag ttg ggt 992
Pro Gly Met Asn Thr Ile Asp Gln Gly Met Ala Ala Leu Lys Leu Gly

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180	185	190	195	
agc aca gaa gtt gca	agc aat gtt cca aaa	ggt gta ggt tct gct gtt		1040
Ser Thr Glu Val Ala	Ser Asn Val Pro Lys	Val Val Gly Ser Ala Val		
196	201	206	211	
ggt agc ggg tcc att	act agt aac atc gtg	gct tcc aat agt ttg cct		1088
Gly Ser Gly Ser Ile	Thr Ser Asn Ile Val	Ala Ser Asn Ser Leu Pro		
212	217	222	227	
cca gcc acc att gct	cct cca aaa cca gca	tct tgg gct gat att gct		1136
Pro Ala Thr Ile Ala	Pro Pro Lys Pro Ala	Ser Trp Ala Asp Ile Ala		
228	233	238	243	
agc aag cct gca aaa	cag caa cct aaa ctg	aag acc aag aat ggc att		1184
Ser Lys Pro Ala Lys	Gln Gln Pro Lys Leu	Lys Thr Lys Asn Gly Ile		
244	249	254	259	
gca ggg tca agt ctt	ccg cca ccc ccg ata	aag cat aac atg gat att		1232
Ala Gly Ser Ser Leu	Pro Pro Pro Pro Ile	Lys His Asn Met Asp Ile		
260	265	270	275	
gga act tgg gat aac	aag ggt ccc gtt gca	aaa gcc ccc tca cag gct		1280
Gly Thr Trp Asp Asn	Lys Gly Pro Val Ala	Lys Ala Pro Ser Gln Ala		
276	281	286	291	
ttg gtt cag aat ata	ggt cag cca acc cag	ggg tct cct cag cct gta		1328
Leu Val Gln Asn Ile	Gly Gln Pro Thr Gln	Gly Ser Pro Gln Pro Val		
292	297	302	307	
ggt cag cag gct aac	aat agc cca cca gtg	gct cag gca tca gta ggg		1376
Gly Gln Gln Ala Asn	Asn Ser Pro Pro Val	Ala Gln Ala Ser Val Gly		
308	313	318	323	
caa cag aca cag cca	ttg cct cca cct cca	cca cag cct gcc cag ctt		1424
Gln Gln Thr Gln Pro	Leu Pro Pro Pro Pro	Pro Gln Pro Ala Gln Leu		
324	329	334	339	
tca gtc cag caa cag	gca gct cag cca acc	cgc tgg gta gca cct cgg		1472
Ser Val Gln Gln Gln	Ala Ala Gln Pro Thr	Arg Trp Val Ala Pro Arg		
340	345	350	355	
aac cgt ggc agt ggg	ttc ggt cat aat ggg	gtg gat ggt aat gga gta		1520
Asn Arg Gly Ser Gly	Phe Gly His Asn Gly	Val Asp Gly Asn Gly Val		
356	361	366	371	
gga cag tct cag gct	ggt tct gga tct act	cct tca gaa ccc cac cca		1568
Gly Gln Ser Gln Ala	Gly Ser Gly Ser Thr	Pro Ser Glu Pro His Pro		
372	377	382	387	
gtg ttg gag aag ctt	cgg tcc att aat aac	tat aac ccc aaa gat ttt		1616
Val Leu Glu Lys Leu	Arg Ser Ile Asn Asn	Tyr Asn Pro Lys Asp Phe		
388	393	398	403	
gac tgg aat ctg aaa	cat ggc cgg gtt ttc	atc att aag agc tac tct		1664
Asp Trp Asn Leu Lys	His Gly Arg Val Phe	Ile Ile Lys Ser Tyr Ser		
404	409	414	419	

gag gac gat att cac cgt tcc att aag tat aat att tgg tgc agc aca	1712
Glu Asp Asp Ile His Arg Ser Ile Lys Tyr Asn Ile Trp Cys Ser Thr	
420 425 430 435	
gag cat ggt aac aag aga ctg gat gct gct tat cgt tcc atg aac ggg	1760
Glu His Gly Asn Lys Arg Leu Asp Ala Ala Tyr Arg Ser Met Asn Gly	
436 441 446 451	
aaa ggc ccc gtt tac tta ctt ttc agt gtc aac ggc agt gga cac ttc	1808
Lys Gly Pro Val Tyr Leu Leu Phe Ser Val Asn Gly Ser Gly His Phe	
452 457 462 467	
tgt ggc gtg gca gaa atg aaa tct gct gtg gac tac aac aca tgt gca	1856
Cys Gly Val Ala Glu Met Lys Ser Ala Val Asp Tyr Asn Thr Cys Ala	
468 473 478 483	
ggg gtg tgg tcc cag gac aaa tgg aag ggt cgt ttt gat gtc agg tgg	1904
Gly Val Trp Ser Gln Asp Lys Trp Lys Gly Arg Phe Asp Val Arg Trp	
484 489 494 499	
att ttt gtg aag gac gtt ccc aat agc caa ctg cga cac att cgc cta	1952
Ile Phe Val Lys Asp Val Pro Asn Ser Gln Leu Arg His Ile Arg Leu	
500 505 510 515	
gag aac aac gag aat aaa cca gtg acc aac tct agg gac act cag gaa	2000
Glu Asn Asn Glu Asn Lys Pro Val Thr Asn Ser Arg Asp Thr Gln Glu	
516 521 526 531	
gtg cct ctg gaa aag gct aag cag gtg ttg aaa att ata gcc agc tac	2048
Val Pro Leu Glu Lys Ala Lys Gln Val Leu Lys Ile Ile Ala Ser Tyr	
532 537 542 547	
aag cac acc act tcc att ttt gat gac ttc tca cac tat gag aaa cgc	2096
Lys His Thr Thr Ser Ile Phe Asp Asp Phe Ser His Tyr Glu Lys Arg	
548 553 558 563	
cca aga gga aga aga aag tgt taa aaaggaacgt caaggctcgtg ggaaataaaa	2150
Pro Arg Gly Arg Arg Lys Cys *	
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aagaatTTTT gtctaggaga atataacagt gttacccaag gttgtgtctt taaggggtggt 2690
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gctttatgaa tttaaaaact tcacagaata actcaacaga aatttaatta tttagaatta 3650
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gttttaaaca cttaaacacc ttaatgcaaa attacttttg acttgaaaat tcattacatg 3770
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<220>
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<222> (77) .. (1978)

<400> 555
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	Met Glu Leu Ala Gln Glu Ala Arg Glu Leu Gly	
	1 5	
tgc tgg gcg gtc gaa gag atg ggg gtg ccc gtg gcg gcc cgg gcc ccg	157	
Cys Trp Ala Val Glu Glu Met Gly Val Pro Val Ala Ala Arg Ala Pro		
12 17 22 27		
gaa tcg acg ctg cgc agg ctg tgt ctg ggc cag ggg gct gac atc tgg	205	
Glu Ser Thr Leu Arg Arg Leu Cys Leu Gly Gln Gly Ala Asp Ile Trp		
28 33 38 43		
gcc tac atc ttg cag cat gtg cac agt cag agg act gtc aag aag atc	253	
Ala Tyr Ile Leu Gln His Val His Ser Gln Arg Thr Val Lys Lys Ile		
44 49 54 59		
cgg gga aac cta ctc tgg tat ggc cac cag gac agt cca cag gtc cgt	301	
Arg Gly Asn Leu Leu Trp Tyr Gly His Gln Asp Ser Pro Gln Val Arg		
60 65 70 75		
cgg aag tta gag ctg gaa gct gct gtg acc cgc ctg cgg gca gaa atc	349	
Arg Lys Leu Glu Leu Glu Ala Ala Val Thr Arg Leu Arg Ala Glu Ile		
76 81 86 91		
cag gaa ctc gac cag agc ctg gag ctg atg gag cga gac act gag gct	397	
Gln Glu Leu Asp Gln Ser Leu Glu Leu Met Glu Arg Asp Thr Glu Ala		
92 97 102 107		
cag gac acg gcc atg gag cag gca cgt cag cac act caa gac acc cag	445	
Gln Asp Thr Ala Met Glu Gln Ala Arg Gln His Thr Gln Asp Thr Gln		
108 113 118 123		
cgt cga gct ctc ctc ctc cgg gcc caa gct ggg gcc atg cga aga cag	493	
Arg Arg Ala Leu Leu Leu Arg Ala Gln Ala Gly Ala Met Arg Arg Gln		
124 129 134 139		
cag cat acg ctc cga gat ccc atg cag cgg ctg cag aat caa ctg agg	541	
Gln His Thr Leu Arg Asp Pro Met Gln Arg Leu Gln Asn Gln Leu Arg		
140 145 150 155		
cgc ctg cag gac atg gag agg aaa gcc aaa gta gat gtg acc ttt gga	589	
Arg Leu Gln Asp Met Glu Arg Lys Ala Lys Val Asp Val Thr Phe Gly		
156 161 166 171		
tcc ctc acg tcg gca gct ctg ggc ctg gag ccc gtg gtc ctg cgt gat	637	
Ser Leu Thr Ser Ala Ala Leu Gly Leu Glu Pro Val Val Leu Arg Asp		
172 177 182 187		
gtc cga aca gcc tgc acc ctc cgg gcc cag ttc ctg cag aac ctc ctg	685	
Val Arg Thr Ala Cys Thr Leu Arg Ala Gln Phe Leu Gln Asn Leu Leu		
188 193 198 203		
ctt ccc cag gcc aag agg ggc agc ctc cca acc cct cat gat gac cac	733	
Leu Pro Gln Ala Lys Arg Gly Ser Leu Pro Thr Pro His Asp Asp His		
204 209 214 219		
ttt ggc act tcg tac cag cag tgg ctg agc tca gtg gag acg ctg ctg	781	

Phe Gly Thr Ser Tyr Gln Gln Trp Leu Ser Ser Val Glu Thr Leu Leu	
220 225 230 235	
aca aac cac ccc cca ggc cac gtc ctg gct gcc ttg gag cac ctg gct	829
Thr Asn His Pro Pro Gly His Val Leu Ala Ala Leu Glu His Leu Ala	
236 241 246 251	
gca gag cgg gag gca gag gtt cgg tcc ctg tgc agt ggg gat ggg ctt	877
Ala Glu Arg Glu Ala Glu Val Arg Ser Leu Cys Ser Gly Asp Gly Leu	
252 257 262 267	
ggc gac aca gag ata tcc aga ccc cag gcc ccg gac cag tca gac tcc	925
Gly Asp Thr Glu Ile Ser Arg Pro Gln Ala Pro Asp Gln Ser Asp Ser	
268 273 278 283	
agc cag acc ctg ccg tcc atg gtt cat ctc atc cag gag ggc tgg cgg	973
Ser Gln Thr Leu Pro Ser Met Val His Leu Ile Gln Glu Gly Trp Arg	
284 289 294 299	
act gtg ggt gtg ctg gtc tcc cag cgg agc acc ctc ctg aag gag cgg	1021
Thr Val Gly Val Leu Val Ser Gln Arg Ser Thr Leu Leu Lys Glu Arg	
300 305 310 315	
caa gtc ttg acc cag cgc ctc cag ggc ctg gtg gag gag gtg gag aga	1069
Gln Val Leu Thr Gln Arg Leu Gln Gly Leu Val Glu Glu Val Glu Arg	
316 321 326 331	
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332 337 342 347	
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Arg Cys Cys Leu Trp Thr Glu Leu Lys Ala Leu His Asp Gln Ser Gln	
348 353 358 363	
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Glu Leu Gln Asp Ala Ala Gly His Arg Gln Leu Leu Leu Arg Glu Leu	
364 369 374 379	
cag gcc aaa cag cag cgg atc ctg cac tgg cgc cag ctg gtg gag gag	1261
Gln Ala Lys Gln Gln Arg Ile Leu His Trp Arg Gln Leu Val Glu Glu	
380 385 390 395	
acc cag gaa cag gtc cgc ctg ctc atc aag gga aac tcg gcc agc aag	1309
Thr Gln Glu Gln Val Arg Leu Leu Ile Lys Gly Asn Ser Ala Ser Lys	
396 401 406 411	
acc cgc ctg tgc cgg agc ccg ggg gag gtg cta gct ctg gtc cag cga	1357
Thr Arg Leu Cys Arg Ser Pro Gly Glu Val Leu Ala Leu Val Gln Arg	
412 417 422 427	
aag gtg gtc cct aca ttt gag gca gtg gca cca cag agc cgg gag ctg	1405
Lys Val Val Pro Thr Phe Glu Ala Val Ala Pro Gln Ser Arg Glu Leu	
428 433 438 443	
ctg cgc tgt ctg gag gag gaa gtc cgg cat ttg ccc cac att ctg ttg	1453
Leu Arg Cys Leu Glu Glu Glu Val Arg His Leu Pro His Ile Leu Leu	

444	449	454	459	
ggc acg ctg ctg cgg cac agg ccg gga gag ttg aag ccc ctg ccc acg				1501
Gly Thr Leu Leu Arg His Arg Pro Gly Glu Leu Lys Pro Leu Pro Thr				
460	465	470	475	
gtc ctc cca tcc atc cac cag ctg cac ccc gcg tcc cca agg ggc tcc				1549
Val Leu Pro Ser Ile His Gln Leu His Pro Ala Ser Pro Arg Gly Ser				
476	481	486	491	
agc ttc ata gcg ctg agc cac aag ctg ggg ctg cct cca ggg aag gcc				1597
Ser Phe Ile Ala Leu Ser His Lys Leu Gly Leu Pro Pro Gly Lys Ala				
492	497	502	507	
tcg gag ctg ctc ctg ccg gcg gct gcc tct ctt cgc cag gac ctt ctg				1645
Ser Glu Leu Leu Leu Pro Ala Ala Ala Ser Leu Arg Gln Asp Leu Leu				
508	513	518	523	
ctc ctg cag gac cag cgg agc ctc tgg tgc tgg gat cta ctc cac atg				1693
Leu Leu Gln Asp Gln Arg Ser Leu Trp Cys Trp Asp Leu Leu His Met				
524	529	534	539	
aag acc agc ctg ccg cca ggc ctt ccc acc cag gag ctg ctg cag atc				1741
Lys Thr Ser Leu Pro Pro Gly Leu Pro Thr Gln Glu Leu Leu Gln Ile				
540	545	550	555	
cag gca tcc cag gaa aaa cag cag aaa gag aac ctg ggg cag gct ctg				1789
Gln Ala Ser Gln Glu Lys Gln Gln Lys Glu Asn Leu Gly Gln Ala Leu				
556	561	566	571	
aag agg ctg gag aag cta ctg aaa cag gca ctg gag cga atc cct gag				1837
Lys Arg Leu Glu Lys Leu Leu Lys Gln Ala Leu Glu Arg Ile Pro Glu				
572	577	582	587	
ctg cag ggg atc gtg ggg gac tgg tgg gag cag cca ggc cag gcc gcc				1885
Leu Gln Gly Ile Val Gly Asp Trp Trp Glu Gln Pro Gly Gln Ala Ala				
588	593	598	603	
ctc tct gag gag ctc tgc cag ggc ctg tcc ctg ccc cag tgg cgg ctg				1933
Leu Ser Glu Glu Leu Cys Gln Gly Leu Ser Leu Pro Gln Trp Arg Leu				
604	609	614	619	
cgc tgg gtt cag gcc cag ggg gcc ctg cag aag ctg tgc agc tga aga				1981
Arg Trp Val Gln Ala Gln Gly Ala Leu Gln Lys Leu Cys Ser *				
620	625	630		
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caaatttggg agtttggcag ctttatgatc ttgaaccttg ctgtccatct ctacacaaac	3901
tcctctcttg gcctccagag tccctttact ctcccagctt tcctcctgcc cctggctgct	3961
gttcccagc ctttccacat tggctttccc atgtagtct tagtgtgtct gctcctcctc	4021

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gacgcctaac cccgcgagaa ccttgcaaatt tttcttctc ataattggga gaagactcac 180
tggccga atg gca gca gta gat gac ttg caa ttt gaa gaa ttt ggc aat 229
Met Ala Ala Val Asp Asp Leu Gln Phe Glu Glu Phe Gly Asn
1 5 10
gca gcc act tct ctg aca gca aac cca gat gcc acc aca gta aac att 277
Ala Ala Thr Ser Leu Thr Ala Asn Pro Asp Ala Thr Thr Val Asn Ile
15 20 25 30
gag gat cct ggt gaa acc cca aaa cat cag cca gga tcc cca aga ggc 325
Glu Asp Pro Gly Glu Thr Pro Lys His Gln Pro Gly Ser Pro Arg Gly
31 36 41 46
tca gga aga gaa gaa gat gat gag tta ctg gga aat gat gac tct gac 373
Ser Gly Arg Glu Glu Asp Asp Glu Leu Leu Gly Asn Asp Asp Ser Asp
47 52 57 62
aaa act gag tta ctt gct gga cag aag aaa agc tcc ccc ttc tgg aca 421
Lys Thr Glu Leu Leu Ala Gly Gln Lys Lys Ser Ser Pro Phe Trp Thr
63 68 73 78
ttt gaa tac tac caa aca ttc ttt gat gtg gac acc tac cag gtc ttt 469
Phe Glu Tyr Tyr Gln Thr Phe Phe Asp Val Asp Thr Tyr Gln Val Phe
79 84 89 94
gac aga att aaa gga tct ctt ttg cca ata ccc ggg aaa aac ttt gtg 517
Asp Arg Ile Lys Gly Ser Leu Leu Pro Ile Pro Gly Lys Asn Phe Val

95	100	105	110	
agg tta tat atc cgc agc aat cca gat ctc tat ggc ccc ttt.tgg ata				565
Arg Leu Tyr Ile Arg Ser Asn Pro Asp Leu Tyr Gly Pro Phe Trp Ile				
111	116	121	126	
tgt gcc acg ttg gtc ttt gcc ata gca att agt ggg aat ctt tcc aac				613
Cys Ala Thr Leu Val Phe Ala Ile Ala Ile Ser Gly Asn Leu Ser Asn				
127	132	137	142	
ttc ttg atc cat ctg gga gag aag acg tac cat tat gtg ccc gaa ttc				661
Phe Leu Ile His Leu Gly Glu Lys Thr Tyr His Tyr Val Pro Glu Phe				
143	148	153	158	
cga aaa gtg tcc ata gca gct acc atc atc tat gcc tat gcc tgg ctg				709
Arg Lys Val Ser Ile Ala Ala Thr Ile Ile Tyr Ala Tyr Ala Trp Leu				
159	164	169	174	
gtt cct ctt gca ctc tgg ggt ttc ctc atg tgg aga aac agc aaa gtt				757
Val Pro Leu Ala Leu Trp Gly Phe Leu Met Trp Arg Asn Ser Lys Val				
175	180	185	190	
atg aac atc gtc tcc tat tca ttt ctg gag att gtg tgt gtc tat gga				805
Met Asn Ile Val Ser Tyr Ser Phe Leu Glu Ile Val Cys Val Tyr Gly				
191	196	201	206	
tat tcc ctc ttc att tat atc ccc acc gca ata ctg tgg att atc ccc				853
Tyr Ser Leu Phe Ile Tyr Ile Pro Thr Ala Ile Leu Trp Ile Ile Pro				
207	212	217	222	
cag aaa gct gtt cgt tgg att cta gtc atg att gcc ctg ggc atc tca				901
Gln Lys Ala Val Arg Trp Ile Leu Val Met Ile Ala Leu Gly Ile Ser				
223	228	233	238	
gga tct ctc ttg gca atg aca ttt tgg cca gct gtt cgt gag gat aac				949
Gly Ser Leu Leu Ala Met Thr Phe Trp Pro Ala Val Arg Glu Asp Asn				
239	244	249	254	
cga cgc gtt gca ttg gcc aca att gtg aca att gtg ttg ctc cat atg				997
Arg Arg Val Ala Leu Ala Thr Ile Val Thr Ile Val Leu Leu His Met				
255	260	265	270	
ctg ctt tct gtg ggc tgc ttg gca tac ttt ttt gat gca cca gag atg				1045
Leu Leu Ser Val Gly Cys Leu Ala Tyr Phe Phe Asp Ala Pro Glu Met				
271	276	281	286	
gac cat ctc cca aca act aca gct act cca aac caa aca gtt gct gca				1093
Asp His Leu Pro Thr Thr Thr Ala Thr Pro Asn Gln Thr Val Ala Ala				
287	292	297	302	
gcc aag tcc agc taa tgaggaaaga ctcaacttgag ataccctctc cttgctgaag				1148
Ala Lys Ser Ser *				
303				
tttttcttga cttctccagt tctcttttgt tttttggagc atgggttcttt gggaagtggc				1208
atccactgca ggaaagcaga atgagcagag ccagcagaac tgatggagtg gcacaaattc				1268

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ccagtgtctg gatggtgcc aactggcgcc taatcacccg tttaacaagc agaaattaaa 1328
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catgcgctga ttggactgaa atgccgggga atagggttagg catgctcagt gccgtccctt 1448
tgccaccaca gtcaaatgac atgcttcact gtggtacctt aatacctgaa atagaaccat 1508
ggaaaattct gatgtcctct ctctgaatta tgtacagact acctggggga tcctcttctc 1568
tccaaatggt agccatcctg aagtagccga acagtagaaa ctttgggtggg gattaaccgg 1628
gagcttgaaa atttgtcttt ggtaacctga tactggacag ctgaactgaa tggctgcaaa 1688
ataaatacct cacatgatgt ctgtgtctgc aaaaaaaaaa aaa 1731

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<212> DNA
<213> Homo sapiens

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<222> (259) .. (1377)

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cgccgcgtgg gccaaacctg cgcccgtgga ggggcgcgca gagggcaccg ggccgcccga 180
gcaggcggcg cagcaccagc attgtgttag tgccgggagg cactgtgtc agcaagctga 240
gagggaaact gaagcaag atg tcg ggc cgg agt ggg aag aag aaa atg tcc 291
          Met Ser Gly Arg Ser Gly Lys Lys Lys Met Ser
          1              5

aag ctg tcc cgt tca gct agg gca ggt gtc atc ttt cca gtg ggg agg 339
Lys Leu Ser Arg Ser Ala Arg Ala Gly Val Ile Phe Pro Val Gly Arg
 12              17              22              27

ctg atg cgt tat ctg aag aaa ggg acg ttc aag tac cgg atc agc gtg 387
Leu Met Arg Tyr Leu Lys Lys Gly Thr Phe Lys Tyr Arg Ile Ser Val
 28              33              38              43

ggc gcc cct gtc tac atg gcg gca gtc att gag tac ctg gca gcg gaa 435
Gly Ala Pro Val Tyr Met Ala Ala Val Ile Glu Tyr Leu Ala Ala Glu
 44              49              54              59

att cta gaa ttg gcc ggc aat gcc gcg agg gac aac aag aag gcc cgg 483
Ile Leu Glu Leu Ala Gly Asn Ala Ala Arg Asp Asn Lys Lys Ala Arg
 60              65              70              75

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ata gcc ccg aga cac atc ttg ctg gca gtt gcc aat gac gag gag ctc	531
Ile Ala Pro Arg His Ile Leu Leu Ala Val Ala Asn Asp Glu Glu Leu	
76 81 86 91	
aac cag ctg cta aaa gga gtg acc atc gcc agt gga ggc gtc ctg ccc	579
Asn Gln Leu Leu Lys Gly Val Thr Ile Ala Ser Gly Gly Val Leu Pro	
92 97 102 107	
aga att cac ccc gaa ctg ctg gcc aaa aag cga ggg acc aaa ggc aag	627
Arg Ile His Pro Glu Leu Leu Ala Lys Lys Arg Gly Thr Lys Gly Lys	
108 113 118 123	
tcg gaa acg atc ctc tcc cca ccc cca gag aaa aga ggc agg aag gcc	675
Ser Glu Thr Ile Leu Ser Pro Pro Pro Glu Lys Arg Gly Arg Lys Ala	
124 129 134 139	
acg tca ggc aag aag ggg ggg aag aaa tcc aag gct gcc aaa cca cgg	723
Thr Ser Gly Lys Lys Gly Gly Lys Lys Ser Lys Ala Ala Lys Pro Arg	
140 145 150 155	
acg tcc aaa aag tcc aaa cca aag gac agc gat aaa gaa gga act tca	771
Thr Ser Lys Lys Ser Lys Pro Lys Asp Ser Asp Lys Glu Gly Thr Ser	
156 161 166 171	
aat tcc acc tct gaa gat ggg cca ggg gat gga ttc acc att ctg tct	819
Asn Ser Thr Ser Glu Asp Gly Pro Gly Asp Gly Phe Thr Ile Leu Ser	
172 177 182 187	
tct aag agc ctt gtt ctg gga cag aag ctg tcc tta acc cag agt gac	867
Ser Lys Ser Leu Val Leu Gly Gln Lys Leu Ser Leu Thr Gln Ser Asp	
188 193 198 203	
atc agc cat att ggc tcc atg aga gtg gag ggc att gtc cac cca acc	915
Ile Ser His Ile Gly Ser Met Arg Val Glu Gly Ile Val His Pro Thr	
204 209 214 219	
aca gcc gaa att gac ctc aaa gaa gat ata ggt aaa gcc ttg gaa aag	963
Thr Ala Glu Ile Asp Leu Lys Glu Asp Ile Gly Lys Ala Leu Glu Lys	
220 225 230 235	
gct ggg gga aaa gag ttc ttg gaa acg gta aag gag ctt cgc aaa tcc	1011
Ala Gly Gly Lys Glu Phe Leu Glu Thr Val Lys Glu Leu Arg Lys Ser	
236 241 246 251	
caa ggc cct ttg gaa gtc gcc gaa gcc gcc gtc agc caa tcc agt gga	1059
Gln Gly Pro Leu Glu Val Ala Glu Ala Ala Val Ser Gln Ser Ser Gly	
252 257 262 267	
ctc gca gcc aaa ttt gtc atc cac tgt cac atc cct cag tgg ggc tcc	1107
Leu Ala Ala Lys Phe Val Ile His Cys His Ile Pro Gln Trp Gly Ser	
268 273 278 283	
gac aaa tgt gaa gaa cag ctt gaa gag acc atc aaa aac tgc ctg tca	1155
Asp Lys Cys Glu Glu Gln Leu Glu Glu Thr Ile Lys Asn Cys Leu Ser	
284 289 294 299	

gcg gcg gag gac aag aag cta aag tcc gtc gcg ttc ccg cct ttc ccc	1203
Ala Ala Glu Asp Lys Lys Leu Lys Ser Val Ala Phe Pro Pro Phe Pro	
300 305 310 315	
agc ggc aga aac tgc ttt ccc aaa cag act gcg gcc cag gtg acc ctc	1251
Ser Gly Arg Asn Cys Phe Pro Lys Gln Thr Ala Ala Gln Val Thr Leu	
316 321 326 331	
aaa gcc atc tca gcc cac ttt gat gac tcg agc gcg tcc tcg ctg aag	1299
Lys Ala Ile Ser Ala His Phe Asp Asp Ser Ser Ala Ser Ser Leu Lys	
332 337 342 347	
aac gtg tac ttc ctg ctc ttc gac agc gag agc atc ggc atc tac gtg	1347
Asn Val Tyr Phe Leu Leu Phe Asp Ser Glu Ser Ile Gly Ile Tyr Val	
348 353 358 363	
cag gag atg gcc aag ctc gac gcc aag tag c cgccgcactt tccagcaggg	1398
Gln Glu Met Ala Lys Leu Asp Ala Lys *	
364 369	
atcggaggac gacccgagtc ccaagagtgg gggttttgctt tttaaaagga gagaggaggg	1458
gtgatggcag gggagtggag ggtggccggg caggtcctgc cggcgcaggg agccctctgc	1518
ccttcacact ctctccaaa agagcctcca tctgtaagga agcaggtctc cgcgaggggt	1578
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attggtttct tttagggagc tacaaattta cgggttcact ggtgattgat cttttcatcc	180
agcaca atg gac aga agt cta agg aac gtc ctt gtg gtt tcc ttt ggg	228
Met Asp Arg Ser Leu Arg Asn Val Leu Val Val Ser Phe Gly	
1 5 10	
ttc ctg ctt ctc ttt aca gcc tat gga ggt ctg cag agc ctg cag agc	276
Phe Leu Leu Leu Phe Thr Ala Tyr Gly Gly Leu Gln Ser Leu Gln Ser	

15	20	25	30	
agc ctg tac agc gag gag ggc ctg ggt gtc aca gcg ctc agc acc ctc				324
Ser Leu Tyr Ser Glu Glu Gly Leu Gly Val Thr Ala Leu Ser Thr Leu				
31	36	41	46	
tat gga ggc atg ctc ctg tcc tcc atg ttc ctc cca ccg ctc ctc atc				372
Tyr Gly Gly Met Leu Leu Ser Ser Met Phe Leu Pro Pro Leu Leu Ile				
47	52	57	62	
gag agg ctg ggc tgc aag ggg acc atc atc ctc tcc atg tgt ggc tac				420
Glu Arg Leu Gly Cys Lys Gly Thr Ile Ile Leu Ser Met Cys Gly Tyr				
63	68	73	78	
gtg gcc ttc tcc gtg ggc aac ttc ttc gcc agc tgg tac act ttg atc				468
Val Ala Phe Ser Val Gly Asn Phe Phe Ala Ser Trp Tyr Thr Leu Ile				
79	84	89	94	
ccc acc tcc ata ctg ctg gga ctc ggg gcc gcc ccg ctg tgg tct gca				516
Pro Thr Ser Ile Leu Leu Gly Leu Gly Ala Ala Pro Leu Trp Ser Ala				
95	100	105	110	
cag tgc aca tac ctc acg atc acg gga aac aca cat gca gag aag gcg				564
Gln Cys Thr Tyr Leu Thr Ile Thr Gly Asn Thr His Ala Glu Lys Ala				
111	116	121	126	
gga aag cgt ggc aaa gac atg gtg aac cag tat ttt ggc atc ttc ttc				612
Gly Lys Arg Gly Lys Asp Met Val Asn Gln Tyr Phe Gly Ile Phe Phe				
127	132	137	142	
ctc ata ttc cag tca tcc ggt gtg tgg ggc aac ttg atc tca tcg ctg				660
Leu Ile Phe Gln Ser Ser Gly Val Trp Gly Asn Leu Ile Ser Ser Leu				
143	148	153	158	
gta ttt ggc cag act ccc agc caa gag acc ctt cca gaa gag cag ctc				708
Val Phe Gly Gln Thr Pro Ser Gln Glu Thr Leu Pro Glu Glu Gln Leu				
159	164	169	174	
acg tcc tgt ggg gcc agt gac tgc ctg atg gcc acc aca acc acc aac				756
Thr Ser Cys Gly Ala Ser Asp Cys Leu Met Ala Thr Thr Thr Thr Asn				
175	180	185	190	
agc acc cag agg ccc tcc cag cag ctg gtc tac acc ctc ctg ggc atc				804
Ser Thr Gln Arg Pro Ser Gln Gln Leu Val Tyr Thr Leu Leu Gly Ile				
191	196	201	206	
tac act ggt acg agc tcc atc ggc cca ggg cag ggt ccc tag caaagca				853
Tyr Thr Gly Thr Ser Ser Ile Gly Pro Gly Gln Gly Pro *				
207	212	217		
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tccttc				918

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                                     1

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Phe Trp Val Gly Thr Ala Pro Leu Val Ala Ala Gly Arg Arg Gly Arg
  4                               9                               14                               19

tgg ccg ccg cag cag ctg atg ctg agc gcg gcg ctg cgg acc ctg aag      151
Trp Pro Pro Gln Gln Leu Met Leu Ser Ala Ala Leu Arg Thr Leu Lys
 20                               25                               30                               35

cat gtt ctg tac tat tca aga cag tgc tta atg gtg tcc cgt aat ctt      199
His Val Leu Tyr Tyr Ser Arg Gln Cys Leu Met Val Ser Arg Asn Leu
 36                               41                               46                               51

ggg tca gtg gga tat gat cct aat gaa aaa act ttt gat aaa att ctt      247
Gly Ser Val Gly Tyr Asp Pro Asn Glu Lys Thr Phe Asp Lys Ile Leu
 52                               57                               62                               67

gtt gct aat aga gga gaa att gca tgt cgg gtt att aga act tgc aag      295
Val Ala Asn Arg Gly Glu Ile Ala Cys Arg Val Ile Arg Thr Cys Lys
 68                               73                               78                               83

aag atg ggc att aag aca gtt gcc atc cac agt gat gtt gat gct agt      343
Lys Met Gly Ile Lys Thr Val Ala Ile His Ser Asp Val Asp Ala Ser
 84                               89                               94                               99

tct gtt cat gtg aaa atg gcg gat gag gct gtc tgt gtt ggc cca gct      391
Ser Val His Val Lys Met Ala Asp Glu Ala Val Cys Val Gly Pro Ala
100                               105                               110                               115

ccc acc agt aaa agc tac ctc aac atg gat gcc atc atg gaa gcc att      439
Pro Thr Ser Lys Ser Tyr Leu Asn Met Asp Ala Ile Met Glu Ala Ile
116                               121                               126                               131

aag aaa acc agg gcc caa gct gta cat cca ggt tat gga ttc ctt tca      487
Lys Lys Thr Arg Ala Gln Ala Val His Pro Gly Tyr Gly Phe Leu Ser
132                               137                               142                               147

gaa aac aaa gaa ttt gcc aga tgt ttg gca gca gaa gat gtc gtt ttc      535
Glu Asn Lys Glu Phe Gln Arg Cys Leu Ala Ala Glu Asp Val Val Phe
148                               153                               158                               163

att gga cct gac aca cat gct att caa gcc atg ggc gac aag att gaa      583
Ile Gly Pro Asp Thr His Ala Ile Gln Ala Met Gly Asp Lys Ile Glu
164                               169                               174                               179

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agc aaa tta tta gct aag aaa gca gag gtt aat aca atc cct ggc ttt Ser Lys Leu Leu Ala Lys Lys Ala Glu Val Asn Thr Ile Pro Gly Phe 180 185 190 195	631
gat gga gta gtc aag gat gca gaa gaa gct gtc aga att gca agg gaa Asp Gly Val Val Lys Asp Ala Glu Glu Ala Val Arg Ile Ala Arg Glu 196 201 206 211	679
att ggc tac cct gtc atg atc aag gcc tca gca ggt ggt ggt ggg aaa Ile Gly Tyr Pro Val Met Ile Lys Ala Ser Ala Gly Gly Gly Gly Lys 212 217 222 227	727
ggc atg cgc att gct tgg gat gat gaa gag acc agg gat ggt ttt aga Gly Met Arg Ile Ala Trp Asp Asp Glu Glu Thr Arg Asp Gly Phe Arg 228 233 238 243	775
ttg tca tct caa gaa gct gct tct agt ttt ggc gat gat aga cta cta Leu Ser Ser Gln Glu Ala Ala Ser Ser Phe Gly Asp Asp Arg Leu Leu 244 249 254 259	823
ata gaa aaa ttt att gat aat cct cgt cat ata gaa atc cag gtt cta Ile Glu Lys Phe Ile Asp Asn Pro Arg His Ile Glu Ile Gln Val Leu 260 265 270 275	871
ggt gat aaa cat ggg aat gct tta tgg ctt aat gaa aga gag tgc tca Gly Asp Lys His Gly Asn Ala Leu Trp Leu Asn Glu Arg Glu Cys Ser 276 281 286 291	919
att cag aga aga aat cag aag gtg gtg gag gaa gca cca agc att ttt Ile Gln Arg Arg Asn Gln Lys Val Val Glu Glu Ala Pro Ser Ile Phe 292 297 302 307	967
ttg gat gcg gag act cga aga gcg atg gga gaa caa gct gta gct ctt Leu Asp Ala Glu Thr Arg Arg Ala Met Gly Glu Gln Ala Val Ala Leu 308 313 318 323	1015
gcc aga gca gta aaa tat tcc tct gct ggg acc gtg gag ttc ctt gtg Ala Arg Ala Val Lys Tyr Ser Ser Ala Gly Thr Val Glu Phe Leu Val 324 329 334 339	1063
gac tct aag aag aat ttt tat ttc ttg gaa atg aat aca aga ctc cag Asp Ser Lys Lys Asn Phe Tyr Phe Leu Glu Met Asn Thr Arg Leu Gln 340 345 350 355	1111
gtt gag cat cct gtc aca gaa tgc att act ggc ctg gac cta gtc cag Val Glu His Pro Val Thr Glu Cys Ile Thr Gly Leu Asp Leu Val Gln 356 361 366 371	1159
gaa atg atc cgt gtt gct aag ggc tac cct ctc agg cac aaa caa gct Glu Met Ile Arg Val Ala Lys Gly Tyr Pro Leu Arg His Lys Gln Ala 372 377 382 387	1207
gat att cgc atc aac ggc tgg gca gtt gaa tgt cgg gtt tat gct gag Asp Ile Arg Ile Asn Gly Trp Ala Val Glu Cys Arg Val Tyr Ala Glu 388 393 398 403	1255

gac ccc tac aag tct ttt ggt tta cca tct att ggg aga ttg tct cag	1303
Asp Pro Tyr Lys Ser Phe Gly Leu Pro Ser Ile Gly Arg Leu Ser Gln	
404 409 414 419	
tac caa gaa ccg tta cat cta cct ggt gtc cga gtg gac agt ggc atc	1351
Tyr Gln Glu Pro Leu His Leu Pro Gly Val Arg Val Asp Ser Gly Ile	
420 425 430 435	
caa cca gga agt gat att agc att tat tat gat cct atg att tca aaa	1399
Gln Pro Gly Ser Asp Ile Ser Ile Tyr Tyr Asp Pro Met Ile Ser Lys	
436 441 446 451	
cta atc aca tat ggc tct gat aga act gag gca ctg aag aga atg gca	1447
Leu Ile Thr Tyr Gly Ser Asp Arg Thr Glu Ala Leu Lys Arg Met Ala	
452 457 462 467	
gat gca ctg gat aac tat gtt att cga ggt gtt aca cat aat att gca	1495
Asp Ala Leu Asp Asn Tyr Val Ile Arg Gly Val Thr His Asn Ile Ala	
468 473 478 483	
tta ctt cga gag gtg ata atc aac tca cgc ttt gta aaa gga gac atc	1543
Leu Leu Arg Glu Val Ile Ile Asn Ser Arg Phe Val Lys Gly Asp Ile	
484 489 494 499	
agc act aaa ttt ctc tcc gat gtg tat cct gat ggc ttc aaa gga cac	1591
Ser Thr Lys Phe Leu Ser Asp Val Tyr Pro Asp Gly Phe Lys Gly His	
500 505 510 515	
atg cta acc aag agt gag aag aac cag tta ttg gca ata gca tca tca	1639
Met Leu Thr Lys Ser Glu Lys Asn Gln Leu Leu Ala Ile Ala Ser Ser	
516 521 526 531	
ttg ttt gtg gca ttc cag tta aga gca caa cat ttt caa gaa aat tca	1687
Leu Phe Val Ala Phe Gln Leu Arg Ala Gln His Phe Gln Glu Asn Ser	
532 537 542 547	
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Arg Met Pro Val Ile Lys Pro Asp Ile Ala Asn Trp Glu Leu Ser Val	
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aaa ttg cat gat aaa gtt cat acc gta gta gca tca aac aat ggg tca	1783
Lys Leu His Asp Lys Val His Thr Val Val Ala Ser Asn Asn Gly Ser	
564 569 574 579	
gtg ttc tcg gtg gaa gtt gat ggg tcg aaa cta aat gtg acc agc acg	1831
Val Phe Ser Val Glu Val Asp Gly Ser Lys Leu Asn Val Thr Ser Thr	
580 585 590 595	
tgg aac ctg gct tcg ccc tta ttg tct gtc agc gtt gat ggc act cag	1879
Trp Asn Leu Ala Ser Pro Leu Leu Ser Val Ser Val Asp Gly Thr Gln	
596 601 606 611	
agg act gtc cag tgt ctt tct cga gaa gca ggt gga aac atg agc att	1927
Arg Thr Val Gln Cys Leu Ser Arg Glu Ala Gly Gly Asn Met Ser Ile	
612 617 622 627	
cag ttt ctt ggt aca gtg tac aag gtg aat atc tta acc aga ctt gcc	1975

Gln Phe Leu Gly Thr Val Tyr Lys Val Asn Ile Leu Thr Arg Leu Ala	
628 633 638 643	
gca gaa ttg aac aaa ttt atg ctg gaa aaa gtg act gag gac aca agc	2023
Ala Glu Leu Asn Lys Phe Met Leu Glu Lys Val Thr Glu Asp Thr Ser	
644 649 654 659	
agt gtt ctg cgt tcc ccg atg ccc gga gtg gtg gtg gcc gtc tct gtc	2071
Ser Val Leu Arg Ser Pro Met Pro Gly Val Val Val Ala Val Ser Val	
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Lys Pro Gly Asp Ala Val Ala Glu Gly Gln Glu Ile Cys Val Ile Glu	
676 681 686 691	
gcc atg aaa atg cag aat agt atg aca gct ggg aaa act ggc acg gtg	2167
Ala Met Lys Met Gln Asn Ser Met Thr Ala Gly Lys Thr Gly Thr Val	
692 697 702 707	
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Lys Ser Val His Cys Gln Ala Gly Asp Thr Val Gly Glu Gly Asp Leu	
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ctc gtg gag ctg gaa tga aggatt tataaccttt cagtcacac ccaatttaat	2269
Leu Val Glu Leu Glu *	
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gtgcagctac gtttacgtcg tcatttattc cacagagtca agaccaatat tctgccaaaa	2389
aatcaccaat ggaaattttc attgatataa atacttgtag atatgatttg tactttctgt	2449
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aaatacaaac ctagcttgag tttagttatg tcctaaatg ttaactgac cctgtggatc	180
gtagggagac agctggcatc cgtttccaac cagccaagga tattcggtcg actgtactga	240

ctgaccactt tgctcaggcc gcaagtgtcc ctcagaaaag cctgaggact tattaaggtc	300
atggaagggtt gccttggcag gaactctttt ctaatcac atg ttt ttg act tcc	353
Met Phe Leu Thr Ser	
1	
ctc tct agc cct aac cgg cag cca ttt gtt ctc ttt ggt aat cac tcc	401
Leu Ser Ser Pro Asn Arg Gln Pro Phe Val Leu Phe Gly Asn His Ser	
6 11 16 21	
aca cga gaa aac ctg aat gct ggc aac ttt aac ttc cct tct gaa gga	449
Thr Arg Glu Asn Leu Asn Ala Gly Asn Phe Asn Phe Pro Ser Glu Gly	
22 27 32 37	
cat ctg gta cga agc act ggt ccc ggc ggg agc ttt gcc aag cac atg	497
His Leu Val Arg Ser Thr Gly Pro Gly Gly Ser Phe Ala Lys His Met	
38 43 48 53	
gta gcc cag tgt gtc tca cca aag gga cct ctt gct tgt tcg aga aca	545
Val Ala Gln Cys Val Ser Pro Lys Gly Pro Leu Ala Cys Ser Arg Thr	
54 59 64 69	
tac ttt ttt gga gct act cat gtt cct tac ttg ggt ggt gac agc aag	593
Tyr Phe Phe Gly Ala Thr His Val Pro Tyr Leu Gly Gly Asp Ser Lys	
70 75 80 85	
ctg ccc aag aaa act gaa caa att agg cta ttg tcc cag ata tat gct	641
Leu Pro Lys Lys Thr Glu Gln Ile Arg Leu Leu Ser Gln Ile Tyr Ala	
86 91 96 101	
gct gtt att gag gct gtt ttg gct ggc att gca tgt tat gct aaa act	689
Ala Val Ile Glu Ala Val Leu Ala Gly Ile Ala Cys Tyr Ala Lys Thr	
102 107 112 117	
tcc agt cta aca aag gcc aag gag gta gca gag caa act ctg gga tct	737
Ser Ser Leu Thr Lys Ala Lys Glu Val Ala Glu Gln Thr Leu Gly Ser	
118 123 128 133	
ggg tta gat tcc ttt gag ttg att ccg ttt aag gca gcc ctg cgc tcc	785
Gly Leu Asp Ser Phe Glu Leu Ile Pro Phe Lys Ala Ala Leu Arg Ser	
134 139 144 149	
aag atg act ttt cat ata cat gct gtg aat aat cag gga aga att gta	833
Lys Met Thr Phe His Ile His Ala Val Asn Asn Gln Gly Arg Ile Val	
150 155 160 165	
ccg ctg gac agt gaa gat agc tta tcc ttt gtg aag acg gct tgt atg	881
Pro Leu Asp Ser Glu Asp Ser Leu Ser Phe Val Lys Thr Ala Cys Met	
166 171 176 181	
gcc gtc tat gac att cct gac tta ctg gga ggc aat ggt tgt tta gga	929
Ala Val Tyr Asp Ile Pro Asp Leu Leu Gly Gly Asn Gly Cys Leu Gly	
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tct gtg gtt ttc tct gaa tca ttt ttg act tct cag atc tta gtt aaa	977
Ser Val Val Phe Ser Glu Ser Phe Leu Thr Ser Gln Ile Leu Val Lys	

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gaa aag gat ggc act gtt acc aca gaa acc agc tcc gta gtc ctg act				1025
Glu Lys Asp Gly Thr Val Thr Thr Glu Thr Ser Ser Val Val Leu Thr				
214	219	224	229	
gct gct gta ccc aga ttc tgc tcc tgg ctg gtg gaa gat aat gaa gta				1073
Ala Ala Val Pro Arg Phe Cys Ser Trp Leu Val Glu Asp Asn Glu Val				
230	235	240	245	
aaa ttg tct gag aaa acc cag caa gca gtg agg ggg gat gag tct ttc				1121
Lys Leu Ser Glu Lys Thr Gln Gln Ala Val Arg Gly Asp Glu Ser Phe				
246	251	256	261	
ctg ggc act tat cta aca gga gga gaa gga gca tat ctt tat tcc agc				1169
Leu Gly Thr Tyr Leu Thr Gly Gly Glu Gly Ala Tyr Leu Tyr Ser Ser				
262	267	272	277	
aat cta cag tcc tgg cct gag gaa ggg aat gtt cat ttc ttc tct agt				1217
Asn Leu Gln Ser Trp Pro Glu Glu Gly Asn Val His Phe Phe Ser Ser				
278	283	288	293	
ggc ctt ctg ttt tct cac tgt cgt cat gga agt atc atc att tcc aag				1265
Gly Leu Leu Phe Ser His Cys Arg His Gly Ser Ile Ile Ile Ser Lys				
294	299	304	309	
gat cac atg aat tcc att tcc ttc tat gat ggg gat tcc acc agt act				1313
Asp His Met Asn Ser Ile Ser Phe Tyr Asp Gly Asp Ser Thr Ser Thr				
310	315	320	325	
gtt gct gct ctt ctc ata gac ttc aaa agc tca ttg ctt cct cac ctc				1361
Val Ala Ala Leu Leu Ile Asp Phe Lys Ser Ser Leu Leu Pro His Leu				
326	331	336	341	
cca gtt cat ttc cat gga tca agc aat ttt ctg atg att gcc ctt ttc				1409
Pro Val His Phe His Gly Ser Ser Asn Phe Leu Met Ile Ala Leu Phe				
342	347	352	357	
ccc aaa tcg aag ata tac caa gca ttt tac tca gag gtc ttc tcc ctc				1457
Pro Lys Ser Lys Ile Tyr Gln Ala Phe Tyr Ser Glu Val Phe Ser Leu				
358	363	368	373	
tgg aaa cag cag gat aac tca ggg atc tct tta aaa gtg atc cag gaa				1505
Trp Lys Gln Gln Asp Asn Ser Gly Ile Ser Leu Lys Val Ile Gln Glu				
374	379	384	389	
gat gga tta tct gtg gaa caa aag aga ttg cac tcc agt gca cag aag				1553
Asp Gly Leu Ser Val Glu Gln Lys Arg Leu His Ser Ser Ala Gln Lys				
390	395	400	405	
ctc ttc agt gcc ctg agc cag cct gct ggg gag aaa cgg agt tcc cta				1601
Leu Phe Ser Ala Leu Ser Gln Pro Ala Gly Glu Lys Arg Ser Ser Leu				
406	411	416	421	
aag tta ctc tca gcc aaa ctc cca gag ctg gac tgg ttt/ctc cag cat				1649
Lys Leu Leu Ser Ala Lys Leu Pro Glu Leu Asp Trp Phe Leu Gln His				
422	427	432	437	

ttc gcc atc agc agc att agc cag gag cct gtg atg cgg acc cat ctt	1697
Phe Ala Ile Ser Ser Ile Ser Gln Glu Pro Val Met Arg Thr His Leu	
438 443 448 453	
cct gtg ctg ctg cag caa gct gaa atc aac act act cac aga ata gaa	1745
Pro Val Leu Leu Gln Gln Ala Glu Ile Asn Thr Thr His Arg Ile Glu	
454 459 464 469	
agt gac aag gta att atc agc att gta acc ggc ctc cca ggc tgt cac	1793
Ser Asp Lys Val Ile Ile Ser Ile Val Thr Gly Leu Pro Gly Cys His	
470 475 480 485	
gct agc gag ctc tgt gct ttt ctg gtc act ctg cat aag gaa tgt ggc	1841
Ala Ser Glu Leu Cys Ala Phe Leu Val Thr Leu His Lys Glu Cys Gly	
486 491 496 501	
aga tgg atg gtg tat cgc caa atc atg gac agc tct gaa tgt ttt cat	1889
Arg Trp Met Val Tyr Arg Gln Ile Met Asp Ser Ser Glu Cys Phe His	
502 507 512 517	
gct gca cac ttc cag aga tac ctt tcc agt gcc cta gag gcc cag cag	1937
Ala Ala His Phe Gln Arg Tyr Leu Ser Ser Ala Leu Glu Ala Gln Gln	
518 523 528 533	
aac cgc tct gcg cgc cag tca gcc tac atc cgc aag aag acc aga ctg	1985
Asn Arg Ser Ala Arg Gln Ser Ala Tyr Ile Arg Lys Lys Thr Arg Leu	
534 539 544 549	
ctg gtg gtg tta caa ggc tac aca gat gtt att gat gtt gtc cag gcc	2033
Leu Val Val Leu Gln Gly Tyr Thr Asp Val Ile Asp Val Val Gln Ala	
550 555 560 565	
ctg cag acc cac cca gac tca aat gtc aag gcc tcc ttc acc att ggt	2081
Leu Gln Thr His Pro Asp Ser Asn Val Lys Ala Ser Phe Thr Ile Gly	
566 571 576 581	
gcc atc aca gca tgt gtg gag ccc atg agc tgc tac atg gag cac aga	2129
Ala Ile Thr Ala Cys Val Glu Pro Met Ser Cys Tyr Met Glu His Arg	
582 587 592 597	
ttt ctc ttt cct aaa tgt ctt gac cag tgt tca caa ggc ctg gtg agt	2177
Phe Leu Phe Pro Lys Cys Leu Asp Gln Cys Ser Gln Gly Leu Val Ser	
598 603 608 613	
aac gtg gta ttc acc agt cac acc acg gag cag cgg cac cct ctc ctt	2225
Asn Val Val Phe Thr Ser His Thr Thr Glu Gln Arg His Pro Leu Leu	
614 619 624 629	
gtt cag ctg cag agc ctc atc agg gct gcc aat cct gct gca gcc ttc	2273
Val Gln Leu Gln Ser Leu Ile Arg Ala Ala Asn Pro Ala Ala Ala Phe	
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att ctt gca gaa aat ggg att gtc acc agg aat gaa gac att gag ctg	2321
Ile Leu Ala Glu Asn Gly Ile Val Thr Arg Asn Glu Asp Ile Glu Leu	
646 651 656 661	

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Ile Leu Ser Glu Asn Ser Phe Ser Ser Pro Glu Met Leu Arg Ser Arg	
662 667 672 677	
tat tta atg tat cct ggc tgg tat gaa ggt aaa ttg aat gct gga tca	2417
Tyr Leu Met Tyr Pro Gly Trp Tyr Glu Gly Lys Leu Asn Ala Gly Ser	
678 683 688 693	
gtc tat ccc cta atg gtt cag atc tgc gta tgg ttt ggc cgt ccc ttg	2465
Val Tyr Pro Leu Met Val Gln Ile Cys Val Trp Phe Gly Arg Pro Leu	
694 699 704 709	
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Glu Lys Thr Arg Phe Val Ala Lys Cys Lys Ala Ile Gln Ser Ser Ile	
710 715 720 725	
aag cca agt ccc ttc tcc gga aac atc tac cac atc ctg ggc aaa gtg	2561
Lys Pro Ser Pro Phe Ser Gly Asn Ile Tyr His Ile Leu Gly Lys Val	
726 731 736 741	
aag ttt tca gac tct gag agg acc atg gag gtc tgc tac aac aca ctg	2609
Lys Phe Ser Asp Ser Glu Arg Thr Met Glu Val Cys Tyr Asn Thr Leu	
742 747 752 757	
gcc aac tcc ttg agc atc atg cca gtt ttg gaa gga ccc aca cca cca	2657
Ala Asn Ser Leu Ser Ile Met Pro Val Leu Glu Gly Pro Thr Pro Pro	
758 763 768 773	
cca gac tcc aaa agc gta tct caa gac agc agc ggg cag cag gag tgc	2705
Pro Asp Ser Lys Ser Val Ser Gln Asp Ser Ser Gly Gln Gln Glu Cys	
774 779 784 789	
tac ctt gtg ttc atc ggc tgc tcc ctg aag gaa gac agc atc aag gac	2753
Tyr Leu Val Phe Ile Gly Cys Ser Leu Lys Glu Asp Ser Ile Lys Asp	
790 795 800 805	
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Trp Leu Arg Gln Ser Ala Lys Gln Lys Pro Gln Arg Lys Ala Leu Lys	
806 811 816 821	
acc agg ggg atg ctg acg caa cag gag atc agg agc atc cac gta aaa	2849
Thr Arg Gly Met Leu Thr Gln Gln Glu Ile Arg Ser Ile His Val Lys	
822 827 832 837	
cgc cac ttg gaa ccc cta cct gca ggc tac ttt tat aat ggc acc caa	2897
Arg His Leu Glu Pro Leu Pro Ala Gly Tyr Phe Tyr Asn Gly Thr Gln	
838 843 848 853	
ttt gtt aac ttc ttt ggt gac aaa act gat ttt cac cca ctc atg gac	2945
Phe Val Asn Phe Phe Gly Asp Lys Thr Asp Phe His Pro Leu Met Asp	
854 859 864 869	
cag ttc atg aat gac tac gtg gaa gaa gcc aac cgg gaa att gag aag	2993
Gln Phe Met Asn Asp Tyr Val Glu Glu Ala Asn Arg Glu Ile Glu Lys	
870 875 880 885	
tat aac cag gag ctg gaa cag cag gag tat cat gac ctc ttt gag ctg	3041

Tyr Asn Gln Glu Leu Glu Gln Gln Glu Tyr His Asp Leu Phe Glu Leu
 886 891 896 901

aag ccc tag aggaagg ctgggcccgt acgtcctgca gaatgtccac cttggagatg 3097
 Lys Pro *
 902

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 Met Asp His Lys Ser Pro Gly Asn Lys Gly
 1 5
 tca ttg gtt tat gca gga att aaa tca att gta aag tca tcg ttg gga 159
 Ser Leu Val Tyr Ala Gly Ile Lys Ser Ile Val Lys Ser Ser Leu Gly
 11 16 21 26
 atg gtg gaa agc agc aga cat aat tgg agt ggg ttg gat aag caa agt 207
 Met Val Glu Ser Ser Arg His Asn Trp Ser Gly Leu Asp Lys Gln Ser
 27 32 37 42
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 Asp Ile Gln Asn Leu Asn Glu Glu Arg Ile Leu Ala Leu Gln Leu Cys
 43 48 53 58
 ggg tgg ata aag aaa gga acg gat gta gac gtg ggg cca ttt ttg aac 303
 Gly Trp Ile Lys Lys Gly Thr Asp Val Asp Val Gly Pro Phe Leu Asn
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 tcc ctt gta caa gaa ggg gaa tgg gaa aga gct gct gct gtg gca ttg 351
 Ser Leu Val Gln Glu Gly Glu Trp Glu Arg Ala Ala Ala Val Ala Leu
 75 80 85 90
 ttc aac ttg gat att cgc cga gca atc caa atc ctg aat gaa ggg gca 399
 Phe Asn Leu Asp Ile Arg Arg Ala Ile Gln Ile Leu Asn Glu Gly Ala
 91 96 101 106
 tct tct gaa aaa gga gat ctg aat ctc aat gtg gta gca atg gct tta 447
 Ser Ser Glu Lys Gly Asp Leu Asn Leu Asn Val Val Ala Met Ala Leu
 107 112 117 122
 tcg ggt tat acg gat gag aag aac tcc ctt tgg aga gaa atg tgt agc 495
 Ser Gly Tyr Thr Asp Glu Lys Asn Ser Leu Trp Arg Glu Met Cys Ser
 123 128 133 138
 aca ctg cga tta cag cta aat aac ccg tat ttg/tgt gtc atg ttt gca 543
 Thr Leu Arg Leu Gln Leu Asn Asn Pro Tyr Leu Cys Val Met Phe Ala
 139 144 149 154

ttt ctg aca agt gaa aca gga tct tac gat gga gtt ttg tat gaa aac	591
Phe Leu Thr Ser Glu Thr Gly Ser Tyr Asp Gly Val Leu Tyr Glu Asn	
155 160 165 170	
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Lys Val Ala Val Arg Asp Arg Val Ala Phe Ala Cys Lys Phe Leu Ser	
171 176 181 186	
gat act cag tta aat aga tac atc gaa aag ttg acc aat gaa atg aaa	687
Asp Thr Gln Leu Asn Arg Tyr Ile Glu Lys Leu Thr Asn Glu Met Lys	
187 192 197 202	
gag gct gga aat ttg gaa gga att ttg ctt aca ggc ctt act aaa gat	735
Glu Ala Gly Asn Leu Glu Gly Ile Leu Leu Thr Gly Leu Thr Lys Asp	
203 208 213 218	
gga gtg gac tta atg gag agt tat gtt gat aga act gga gat gtt caa	783
Gly Val Asp Leu Met Glu Ser Tyr Val Asp Arg Thr Gly Asp Val Gln	
219 224 229 234	
aca gca agt tac tgt atg tta cag ggt tca cct tta gat gtt ctt aaa	831
Thr Ala Ser Tyr Cys Met Leu Gln Gly Ser Pro Leu Asp Val Leu Lys	
235 240 245 250	
gat gaa agg gtt cag tac tgg att gag aat tat aga aat tta tta gat	879
Asp Glu Arg Val Gln Tyr Trp Ile Glu Asn Tyr Arg Asn Leu Leu Asp	
251 256 261 266	
gcc tgg agg ttt tgg cat aaa cga gct gaa ttt gat att cac agg agt	927
Ala Trp Arg Phe Trp His Lys Arg Ala Glu Phe Asp Ile His Arg Ser	
267 272 277 282	
aag ttg gat ccc agt tcc aag cct tta gca caa gtt ttt gtg agt tgc	975
Lys Leu Asp Pro Ser Ser Lys Pro Leu Ala Gln Val Phe Val Ser Cys	
283 288 293 298	
aat ttc tgt ggc aag tca atc tcc tac agc tgt tca gct gtg cct cat	1023
Asn Phe Cys Gly Lys Ser Ile Ser Tyr Ser Cys Ser Ala Val Pro His	
299 304 309 314	
cag ggc aga ggt ttt agt cag tat ggt gtg agt ggc tca cca acg aaa	1071
Gln Gly Arg Gly Phe Ser Gln Tyr Gly Val Ser Gly Ser Pro Thr Lys	
315 320 325 330	
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Ser Lys Val Thr Ser Cys Pro Gly Cys Arg Lys Pro Leu Pro Arg Cys	
331 336 341 346	
gcg ctt tgt ctc att aat atg gga aca cca gtt tct agc tgt cct gga	1167
Ala Leu Cys Leu Ile Asn Met Gly Thr Pro Val Ser Ser Cys Pro Gly	
347 352 357 362	
gga acc aaa tca gat gaa aaa gtg gac ttg agc aag gac aaa aaa tta	1215
Gly Thr Lys Ser Asp Glu Lys Val Asp Leu Ser Lys Asp Lys Lys Leu	
363 368 373 378	

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Ala Gln Phe Asn Asn Trp Phe Thr Trp Cys His Asn Cys Arg His Gly
379 384 389 394

gga cat gct gga cat atg ctt agt tgg ttc agg gac cat gca gag tgc 1311
Gly His Ala Gly His Met Leu Ser Trp Phe Arg Asp His Ala Glu Cys
395 400 405 410

cct gtg tct gca tgc acg tgt aaa tgt atg cag ttg gat aca acg ggg 1359
Pro Val Ser Ala Cys Thr Cys Lys Cys Met Gln Leu Asp Thr Thr Gly
411 416 421 426

aat ctg gta cct gca gag act gtc cag cca taa aatgttac caccttaaga 1410
Asn Leu Val Pro Ala Glu Thr Val Gln Pro *
427 432 437

gaacccttca agtgtggagc tttctagtag gtgtccttca tagctcagaa acatacctca 1470

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actocagaat tggccgctgg cggtatc atg gcg acc cgg aac ccc cct ccc 171
Met Ala Thr Arg Asn Pro Pro Pro
1 5

caa gac tat gaa agt gat gac gac tct tat gaa gtg ttg gat tta act 219
Gln Asp Tyr Glu Ser Asp Asp Asp Ser Tyr Glu Val Leu Asp Leu Thr
9 14 19 24

gag tat gca aga aga cac cag tgg tgg aat cga gtg ttt ggc cac agt 267
Glu Tyr Ala Arg Arg His Gln Trp Trp Asn Arg Val Phe Gly His Ser
25 30 35 40

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41 46 51 56

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Gly Gly Val Thr Gly Trp Cys Ala Gly Phe Leu Phe Gln Lys Val Gly

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Lys Leu Ala Ala Thr Ala Val Gly Gly Gly Phe Leu Leu Leu Gln Ile				
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Ala Ser His Ser Gly Tyr Val Gln Ile Asp Trp Lys Arg Val Glu Lys				
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Gln Asn Ile Val Ile Ser Ser Gly Phe Val Gly Gly Phe Leu Leu Gly				
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Leu Ala Ser *				
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Arg Phe Ser Ala Gly Pro Pro Thr Gln Arg Ser Arg Pro Thr Met Ser		
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Ser Arg Ser Ala Lys Lys Cys Asp Lys Glu Glu Lys Ala Glu Lys Ala		
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cac gcc gaa aat gcc atc cgc cag aag aac cag gcg gtg aat ttc ttg	385	
His Ala Glu Asn Ala Ile Arg Gln Lys Asn Gln Ala Val Asn Phe Leu		
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Val Thr Met Gly Lys Val Thr Lys Ser Met Ala Gly Val Val Lys Ser		
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Asn Gln Val Asp Met Leu Leu Gln Glu Met Ala Asp Glu Ala Gly Leu		
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Met Asp Val Asn Thr Ala Leu Gln Glu Val Leu Lys Thr Ala Leu Ile	
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His Asp Gly Leu Ala Arg Gly Ile Arg Glu Ala Ala Lys Ala Leu Asp	
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Lys Arg Gln Ala His Leu Cys Val Leu Ala Ser Asn Cys Asp Glu Pro	
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Met Tyr Val Lys Leu Val Glu Ala Leu Cys Ala Glu His Gln Ile Asn	
60 65 70 75	
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Cys Lys Ile Asp Arg Glu Gly Lys Pro Arg Lys Val Val Gly Cys Ser	
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Cys Val Val Val Lys Asp Tyr Gly Lys Glu Ser Gln Ala Lys Asp Val	
108 113 118 123	
cat cca act gtg atg agc cta tgt atg tca a gttggtggag gccctttgtg	978
Ile Glu Glu Tyr Phe Lys Cys Lys Lys *	
124 129	
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                Met Thr Lys Asn Asp Ala Pro Ala Leu Val
                        1                5

att aca aca caa tgt gaa att tgc tat aaa ggt aac ctt gaa aat agt      160
Ile Thr Thr Gln Cys Glu Ile Cys Tyr Lys Gly Asn Leu Glu Asn Ser
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aca atg act gct gcc att aaa gat ctc caa gtg aga gcc tgc ccg ttt      208
Thr Met Thr Ala Ala Ile Lys Asp Leu Gln Val Arg Ala Cys Pro Phe
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ctt cca gtc aag aga aaa ggc aaa atc act act gtt ttg cag ccc tgt      256
Leu Pro Val Lys Arg Lys Gly Lys Ile Thr Thr Val Leu Gln Pro Cys
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gac ttg ttt tat caa act act cag aaa ggt aca gat cca caa gtg atc      304
Asp Leu Phe Tyr Gln Thr Thr Gln Lys Gly Thr Asp Pro Gln Val Ile
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gat atg tca gta aaa tcc ctg aca cta aag gtt tca cca gtt att ata      352
Asp Met Ser Val Lys Ser Leu Thr Leu Lys Val Ser Pro Val Ile Ile
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aat act atg att acc ata act tca gca ctg tat aca act aag gaa acc      400
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    91                96                101                106

atc cca gaa gaa acg gct tct tct act gca cat tta tgg gaa aag aag      448
Ile Pro Glu Glu Thr Ala Ser Ser Thr Ala His Leu Trp Glu Lys Lys
   107                112                117                122

gat aca aag act tta aaa atg tgg ttt ctt gaa gaa tca aat gaa act      496
Asp Thr Lys Thr Leu Lys Met Trp Phe Leu Glu Glu Ser Asn Glu Thr
   123                128                133                138

gaa aaa ata gct ccc aca act gaa ttg gta ccc aaa ggc gag atg ata      544
Glu Lys Ile Ala Pro Thr Thr Glu Leu Val Pro Lys Gly Glu Met Ile
   139                144                149                154

aaa atg aac att gat tct att ttt ata gtt ctt gag gct gga att ggt      592
Lys Met Asn Ile Asp Ser Ile Phe Ile Val Leu Glu Ala Gly Ile Gly
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cat aga aca gta cct atg ctt ctg gca aag tca cgt ttt tca ggg gaa      640
His Arg Thr Val Pro Met Leu Leu Ala Lys Ser Arg Phe Ser Gly Glu
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ggc aaa aac tgg agt tcc cta ata aat ctg cac tgt cag ctt gag cta      688
Gly Lys Asn Trp Ser Ser Leu Ile Asn Leu His Cys Gln Leu Glu Leu
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gaa gtg cat tat tat aat gaa atg ttt ggt gta tgg gag cct ttg ctt      736

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Glu Pro Leu Glu Ile Asp Gln Thr Glu Asp Phe Arg Pro Trp Asn Leu	
219 224 229 234	
ggt atc aag atg aaa aag aaa gca aaa atg gcc att gtt gag tca gat	832
Gly Ile Lys Met Lys Lys Lys Ala Lys Met Ala Ile Val Glu Ser Asp	
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cct gaa gaa gaa aac tac aaa gtg cca gaa tat aaa act gtc atc agt	880
Pro Glu Glu Glu Asn Tyr Lys Val Pro Glu Tyr Lys Thr Val Ile Ser	
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Phe His Ser Lys Asp Gln Leu Asn Ile Thr Leu Ser Lys Cys Gly Leu	
267 272 277 282	
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Val Met Leu Asn Asn Leu Val Lys Ala Phe Thr Glu Ala Ala Thr Gly	
283 288 293 298	
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Ser Ser Ala Asp Phe Val Lys Asp Leu Ala Pro Phe Met Ile Leu Asn	
299 304 309 314	
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Ser Leu Gly Leu Thr Ile Ser Val Ser Pro Ser Asp Ser Phe Ser Val	
315 320 325 330	
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Met Thr Ser Leu Ser Ser Lys Leu Phe Phe Ile Leu Leu Thr Pro Val	
363 368 373 378	
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379 384 389 394	
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Leu Tyr Thr Val Arg His Arg Glu Ser Gly Val Glu Arg Ser Ile Val	
395 400 405 410	
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Cys Gln Ile Asp Thr Val Glu Gly Ser Lys Lys Val Thr Ile Arg Ser	
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Pro Val Gln Ile Arg Asn His Phe Ser Val Pro Leu Ser Val Tyr Glu	

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Pro Leu Gly Ser Tyr Arg Ser Phe Ile Phe Leu Lys Pro Glu Asp Glu				
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Asn Tyr Gln Met Cys Glu Gly Ile Asp Phe Glu Glu Ile Ile Lys Asn				
475	480	485	490	
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Asp Gly Ala Leu Leu Lys Lys Lys Cys Arg Ser Lys Asn Pro Ser Lys				
491	496	501	506	
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Glu Ser Phe Leu Ile Asn Ile Val Pro Glu Lys Asp Asn Leu Thr Ser				
507	512	517	522	
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Thr Glu Met Glu Lys Thr Asp Leu Asp Ile Ala Val His Met Thr Tyr				
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779 784 789 794	
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Glu Asp Pro Pro Lys Arg Ile Tyr Phe Asn Lys Gln Glu Asn Cys Ile	
795 800 805 810	
cta ttg cgt cta gat aac gag ctt gga ggt att ata gca gaa gtg aat	2560
Leu Leu Arg Leu Asp Asn Glu Leu Gly Gly Ile Ile Ala Glu Val Asn	
811 816 821 826	
ttg gcc gag cat tct aca gtt att aca ttt tta gat tat cat gat gga	2608
Leu Ala Glu His Ser Thr Val Ile Thr Phe Leu Asp Tyr His Asp Gly	
827 832 837 842	
gca gct aca ttc ctc tta ata aat cac aca aag aat gaa ctt gtt caa	2656
Ala Ala Thr Phe Leu Leu Ile Asn His Thr Lys Asn Glu Leu Val Gln	
843 848 853 858	
tac aat caa agt tct ctc agt gaa ata gaa gat tcc ctc cct cct ggt	2704
Tyr Asn Gln Ser Ser Leu Ser Glu Ile Glu Asp Ser Leu Pro Pro Gly	
859 864 869 874	
aaa gcc gtg ttt tat aca tgg gct gat ccg gtg ggc tct aga agg ctg	2752
Lys Ala Val Phe Tyr Thr Trp Ala Asp Pro Val Gly Ser Arg Arg Leu	
875 880 885 890	

aag tgg aga tgt aga aaa agc cat ggt gaa gta aca cag aag gat gat	2800
Lys Trp Arg Cys Arg Lys Ser His Gly Glu Val Thr Gln Lys Asp Asp	
891 896 901 906	
atg atg atg cct ata gat ttg ggg gaa aag aca ata tat tta gtt tca	2848
Met Met Met Pro Ile Asp Leu Gly Glu Lys Thr Ile Tyr Leu Val Ser	
907 912 917 922	
ttc ttt gaa ggt tta caa cgc att att tta ttc act gaa gat cca agg	2896
Phe Phe Glu Gly Leu Gln Arg Ile Ile Leu Phe Thr Glu Asp Pro Arg	
923 928 933 938	
gta ttt aaa gta aca tat gaa agt gag aaa gca gag tta gca gag caa	2944
Val Phe Lys Val Thr Tyr Glu Ser Glu Lys Ala Glu Leu Ala Glu Gln	
939 944 949 954	
gaa att gca gtg gca tta caa gat gtt gga att tct ctt gtc aac aat	2992
Glu Ile Ala Val Ala Leu Gln Asp Val Gly Ile Ser Leu Val Asn Asn	
955 960 965 970	
tac acg aag caa gaa gta gcc tat ata ggc att aca agt tct gat gtg	3040
Tyr Thr Lys Gln Glu Val Ala Tyr Ile Gly Ile Thr Ser Ser Asp Val	
971 976 981 986	
gtt tgg gaa aca aag ccc aag aag aag gca aga tgg aag cca atg agt	3088
Val Trp Glu Thr Lys Pro Lys Lys Lys Ala Arg Trp Lys Pro Met Ser	
987 992 997 1002	
gta aag cac act gag aag tta gag aga gaa ttt aag gaa tat act gaa	3136
Val Lys His Thr Glu Lys Leu Glu Arg Glu Phe Lys Glu Tyr Thr Glu	
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tct tct cct tca gaa gat aag gtt att cag ttg gac act aat gtt ccg	3184
Ser Ser Pro Ser Glu Asp Lys Val Ile Gln Leu Asp Thr Asn Val Pro	
1019 1024 1029 1034	
gtt cgc cta acc cct act ggt cat aac atg aaa att ctg cag ccg cat	3232
Val Arg Leu Thr Pro Thr Gly His Asn Met Lys Ile Leu Gln Pro His	
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Val Ile Ala Leu Arg Arg Asn Tyr Leu Pro Ala Leu Lys Val Glu Tyr	
1051 1056 1061 1066	
aac aca tct gca cat caa tca tca ttt aga att cag att tac aga ata	3328
Asn Thr Ser Ala His Gln Ser Ser Phe Arg Ile Gln Ile Tyr Arg Ile	
1067 1072 1077 1082	
cag atc caa aat cag ata cat ggt gct gta ttt ccc ttt gtg ttt tat	3376
Gln Ile Gln Asn Gln Ile His Gly Ala Val Phe Pro Phe Val Phe Tyr	
1083 1088 1093 1098	
cct gtt aaa cct cca aag tcg gtc acc atg gat tca gca cca aag ccc	3424
Pro Val Lys Pro Pro Lys Ser Val Thr Met Asp Ser Ala Pro Lys Pro	
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[illegible][illegible][illegible]

$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & i \\ 0 & 1 \end{pmatrix}$

[illegible][illegible][illegible][illegible][illegible][illegible]

$\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & i \\ 0 & 1 \end{pmatrix}$

[illegible][illegible]

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1355	1360	1365	1370	
gaa gac tac caa cag aag aga aga gaa gcc atg aat aag caa cca gct				4240
Glu Asp Tyr Gln Gln Lys Arg Arg Glu Ala Met Asn Lys Gln Pro Ala				
1371	1376	1381	1386	
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Gly Phe Arg Glu Gly Ile Thr Arg Gly Gly Lys Gly Leu Val Ser Gly				
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Phe Val Ser Gly Ile Thr Gly Ile Val Thr Lys Pro Ile Lys Gly Ala				
1403	1408	1413	1418	
caa aaa gga gga gca gct ggt ttc ttt aaa ggt gtt ggg aaa ggt tta				4384
Gln Lys Gly Gly Ala Ala Gly Phe Phe Lys Gly Val Gly Lys Gly Leu				
1419	1424	1429	1434	
gta gga gcg gta gca agg cca act gga ggc atc ata gac atg gct agc				4432
Val Gly Ala Val Ala Arg Pro Thr Gly Gly Ile Ile Asp Met Ala Ser				
1435	1440	1445	1450	
agt aca ttt cag ggg ata aaa aga gct aca gag act tct gaa gtg gag				4480
Ser Thr Phe Gln Gly Ile Lys Arg Ala Thr Glu Thr Ser Glu Val Glu				
1451	1456	1461	1466	
agt ctg cga cct cct cgg ttc ttc aat gaa gat gga gtt atc aga ccg				4528
Ser Leu Arg Pro Pro Arg Phe Phe Asn Glu Asp Gly Val Ile Arg Pro				
1467	1472	1477	1482	
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Tyr Arg Leu Arg Asp Gly Thr Gly Asn Gln Met Leu Gln Lys Ile Gln				
1483	1488	1493	1498	
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Phe Tyr Arg Glu Trp Ile Met Thr His Ser Ser Ser Ser Asp Asp Asp				
1499	1504	1509	1514	
gat gat gat gat gat gat gat gag tca gat cta aac cat taa aattcat				4673
Asp Asp Asp Asp Asp Asp Asp Glu Ser Asp Leu Asn His *				
1515	1520	1525		
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gcccataatgt ccatttatag ggaggtaaaa cacattttct tttaaaatgt tttcctacac				4793
attttcataa agcaaaataa ttgtattatt taagcacaga aaaaaatgta tcttacatcc				4853
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5078

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cgaaggacgc cgccggggagc tgcggagcat gcgtggagtg gcagtgctaa cggctggtgt 240

ctcgcactgt tggcctgtga aggtacgtga agctgaaagc ctgga atg gct gga 294
Met Ala Gly
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Lys Gly Ser Ser Gly Arg Arg Pro Leu Leu Leu Gly Leu Leu Val Ala
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Val Ala Thr Val His Leu Val Ile Cys Pro Tyr Thr Lys Val Glu Glu
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Ser Phe Asn Leu Gln Ala Thr His Asp Leu Leu Tyr His Trp Gln Asp
36 41 46 51

ctg gag cag tac gac cat ctt gag ttc ccc gga gtc gtc ccc agg acg 486
Leu Glu Gln Tyr Asp His Leu Glu Phe Pro Gly Val Val Pro Arg Thr
52 57 62 67

ttc ctc ggg cca gtg gtg atc gca gtg ttc tcc agc ccc gcg gtt tac 534
Phe Leu Gly Pro Val Val Ile Ala Val Phe Ser Ser Pro Ala Val Tyr
68 73 78 83

gtg ctt tcg ctg tta gaa atg tcc aag ttt tac tct cag cta ata gtt 582
Val Leu Ser Leu Leu Glu Met Ser Lys Phe Tyr Ser Gln Leu Ile Val
84 89 94 99

aga gga gtg ctt gga ctc ggc gtg att ttt gga ctc tgg acg tta caa	630
Arg Gly Val Leu Gly Leu Gly Val Ile Phe Gly Leu Trp Thr Leu Gln	
100 105 110 115	
aag gaa gtg aga cgg cac ttc ggg gcc atg gtg gcc acc atg ttc tgc	678
Lys Glu Val Arg Arg His Phe Gly Ala Met Val Ala Thr Met Phe Cys	
116 121 126 131	
tgg gtg acg gcc atg cag ttc cac ctg atg ttc tac tgc acg cgg aca	726
Trp Val Thr Ala Met Gln Phe His Leu Met Phe Tyr Cys Thr Arg Thr	
132 137 142 147	
ctg ccc aat gtg ctg gcc ctg cct gta gtc ctg ctg gcc ctc gcg gcc	774
Leu Pro Asn Val Leu Ala Leu Pro Val Val Leu Leu Ala Leu Ala Ala	
148 153 158 163	
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Trp Leu Arg His Glu Trp Ala Arg Phe Ile Trp Leu Ser Ala Phe Ala	
164 169 174 179	
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Ile Ile Val Phe Arg Val Glu Leu Cys Leu Phe Leu Gly Leu Leu Leu	
180 185 190 195	
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Leu Leu Ala Leu Gly Asn Arg Lys Val Ser Val Val Arg Ala Leu Arg	
196 201 206 211	
cac gcc gtc ccg gca ggg atc ctc tgt tta gga ctg acg gtt gct gtg	966
His Ala Val Pro Ala Gly Ile Leu Cys Leu Gly Leu Thr Val Ala Val	
212 217 222 227	
gac tct tat ttt tgg cgg cag ctc act tgg ccg gaa gga aag gtg ctt	1014
Asp Ser Tyr Phe Trp Arg Gln Leu Thr Trp Pro Glu Gly Lys Val Leu	
228 233 238 243	
tgg tac aac act gtc ctg aac aaa agc tcc aac tgg ggg acc tcc ccg	1062
Trp Tyr Asn Thr Val Leu Asn Lys Ser Ser Asn Trp Gly Thr Ser Pro	
244 249 254 259	
ctg ctg tgg tac ttc tac tca gcc ctg ccc cgc ggc ctg ggc tgc agc	1110
Leu Leu Trp Tyr Phe Tyr Ser Ala Leu Pro Arg Gly Leu Gly Cys Ser	
260 265 270 275	
ctg ctc ttc atc ccc ctg ggc ttg gta gac aga agg acg cac gcg ccg	1158
Leu Leu Phe Ile Pro Leu Gly Leu Val Asp Arg Arg Thr His Ala Pro	
276 281 286 291	
acg gtg ctg gca ctg ggc ttc atg gca ctc tac tcc ctc ctg cca cac	1206
Thr Val Leu Ala Leu Gly Phe Met Ala Leu Tyr Ser Leu Leu Pro His	
292 297 302 307	
aag gag cta cgc ttc atc atc tat gcc ttc ccc atg ctc aac atc acg	1254
Lys Glu Leu Arg Phe Ile Ile Tyr Ala Phe Pro Met Leu Asn Ile Thr	
308 313 318 323	
gct gcc aga ggc tgc tcc tac ctg ctg aat aac tat aaa aag tct tgg	1302

Ala Ala Arg Gly Cys Ser Tyr Leu Leu Asn Asn Tyr Lys Lys Ser Trp	
324 329 334 339	
ctg tac aaa gcg ggg tct ctg ctt gtg atc gga cac ctc gtg gtg aat	1350
Leu Tyr Lys Ala Gly Ser Leu Leu Val Ile Gly His Leu Val Val Asn	
340 345 350 355	
gcc gcc tac tca gcc acg gcc ctg tat gtg tcc cat ttc aac tac cca	1398
Ala Ala Tyr Ser Ala Thr Ala Leu Tyr Val Ser His Phe Asn Tyr Pro	
356 361 366 371	
ggt ggc gtc gca atg cag agg ctg cac cag ctg gtg ccc ccc cag aca	1446
Gly Gly Val Ala Met Gln Arg Leu His Gln Leu Val Pro Pro Gln Thr	
372 377 382 387	
gac gtc ctt ctg cac att gac gtg gca gcc gcc cag aca ggt gtg tct	1494
Asp Val Leu Leu His Ile Asp Val Ala Ala Ala Gln Thr Gly Val Ser	
388 393 398 403	
cgg ttt ctc caa gtc aac agc gcc tgg agg tac gac aag agg gag gat	1542
Arg Phe Leu Gln Val Asn Ser Ala Trp Arg Tyr Asp Lys Arg Glu Asp	
404 409 414 419	
gtg cag ccg ggg aca ggc atg ctg gca tac aca cac atc ctc atg gag	1590
Val Gln Pro Gly Thr Gly Met Leu Ala Tyr Thr His Ile Leu Met Glu	
420 425 430 435	
gcg gcc cct ggg ctc ctg gcc ctc tac agg gac aca cac ccg gtc ctg	1638
Ala Ala Pro Gly Leu Leu Ala Leu Tyr Arg Asp Thr His Arg Val Leu	
436 441 446 451	
gcc agc gtc gtg ggg acc aca ggt gtg agt ctg aac ctg acc caa ctg	1686
Ala Ser Val Val Gly Thr Thr Gly Val Ser Leu Asn Leu Thr Gln Leu	
452 457 462 467	
ccc ccc ttc aac gtc cac ctg cag aca aag ctg gtg ctt ctg gag agg	1734
Pro Pro Phe Asn Val His Leu Gln Thr Lys Leu Val Leu Leu Glu Arg	
468 473 478 483	
ctc ccc ccg ccg tcc tga ggggga ccaggcagcc ctcagcagcc acaggccttc	1788
Leu Pro Arg Pro Ser *	
484 489	
caggagctgt tatcactacc agtttctggc acaattccag cacaattatg acaattcaga	1848
gaagcaagtc aaaggactgg gcacctgcct ctgacagaca ccagaccagg tccaggcct	1908
cctccacagc ctcagctggg gctctcagca ccaaagaacg aggggcccag gtcttggttg	1968
caccccgga gccactgccc agggatgatg tggccagctc agggcttcct gcgggtgact	2028
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Ser Arg Thr Leu Tyr Ser Ser Ser Pro Arg Val Leu Ser Asn Asn Ser
17 22 27 32

gac gcc aac ttg gag ctc atc aac acc tgg gtg gcc aag aac acc aac 144
Asp Ala Asn Leu Glu Leu Ile Asn Thr Trp Val Ala Lys Asn Thr Asn
33 38 43 48

aac aag atc agc cgg ctg cta gac agt ctg ccc tcc gat acc cgc ctt 192
Asn Lys Ile Ser Arg Leu Leu Asp Ser Leu Pro Ser Asp Thr Arg Leu
49 54 59 64

gtc ctc ctc aat gct atc tac ctg agt gcc aag tgg aag aca aca ttt 240
Val Leu Leu Asn Ala Ile Tyr Leu Ser Ala Lys Trp Lys Thr Thr Phe
65 70 75 80

gat ccc aag aaa acc aga atg gaa ccc ttt cac ttc aaa aac tca gtt 288
Asp Pro Lys Lys Thr Arg Met Glu Pro Phe His Phe Lys Asn Ser Val
81 86 91 96

ata aaa gtg ccc atg atg aat agc aag aag tac cct gtg gcc cat ttc 336
Ile Lys Val Pro Met Met Asn Ser Lys Lys Tyr Pro Val Ala His Phe
97 102 107 112

att gac caa act ttg aaa gcc aag ttg agt cgt ggg gac agc ttg aag 384
Ile Asp Gln Thr Leu Lys Ala Lys Leu Ser Arg Gly Asp Ser Leu Lys
113 118 123 128

gag cca acc tca att gca gag agc agc cgt cac ccc agc tac cgc tca 432
Glu Pro Thr Ser Ile Ala Glu Ser Ser Arg His Pro Ser Tyr Arg Ser
129 134 139 144

gag ccc agc ttg gaa cca gag agc ttc cgt tct cct acc ttt ggc aaa	480
Glu Pro Ser Leu Glu Pro Glu Ser Phe Arg Ser Pro Thr Phe Gly Lys	
145 150 155 160	
agt ttt cac ttc gat cca cta tcc agt ggc tca cgc tcc tcc agc ctc	528
Ser Phe His Phe Asp Pro Leu Ser Ser Gly Ser Arg Ser Ser Ser Leu	
161 166 171 176	
aag tca gcc cag ggc aca ggc ttt gag ctg ggc cag ttg caa tcc att	576
Lys Ser Ala Gln Gly Thr Gly Phe Glu Leu Gly Gln Leu Gln Ser Ile	
177 182 187 192	
cgt tca gag ggc acc acc tcc acc tcc tat aag agc ctg gcc aac cag	624
Arg Ser Glu Gly Thr Thr Ser Thr Ser Tyr Lys Ser Leu Ala Asn Gln	
193 198 203 208	
aca cgc aat gga agc cta tct tat gac agc ttg ctc aca cct tca gac	672
Thr Arg Asn Gly Ser Leu Ser Tyr Asp Ser Leu Leu Thr Pro Ser Asp	
209 214 219 224	
agc cct gat ttt gag tca gtg cag gca ggg cct gag cca gac cca cct	720
Ser Pro Asp Phe Glu Ser Val Gln Ala Gly Pro Glu Pro Asp Pro Pro	
225 230 235 240	
tta ggc tat acc tct ccc ttc ctg tca gcc agg ctg gcc cag caa cgg	768
Leu Gly Tyr Thr Ser Pro Phe Leu Ser Ala Arg Leu Ala Gln Gln Arg	
241 246 251 256	
gaa gct gag agg cac cca cgt ttg gtg cca act ggc cca aca cac cga	816
Glu Ala Glu Arg His Pro Arg Leu Val Pro Thr Gly Pro Thr His Arg	
257 262 267 272	
gag ccc tca cca gtc cgt tac gac aat ctg tcg cgc cac att gtg gcc	864
Glu Pro Ser Pro Val Arg Tyr Asp Asn Leu Ser Arg His Ile Val Ala	
273 278 283 288	
tct ctc cag gaa cga gag aag ttg ctg cgc cag tca ccc cca ctc ccg	912
Ser Leu Gln Glu Arg Glu Lys Leu Leu Arg Gln Ser Pro Pro Leu Pro	
289 294 299 304	
ggc cgt gag gaa gaa cca ggc ttg ggg gac tca ggc att cag tca aca	960
Gly Arg Glu Glu Glu Pro Gly Leu Gly Asp Ser Gly Ile Gln Ser Thr	
305 310 315 320	
cca ggc tcg ggc cat gcc cct cgt act agt tcc tcc tca gat gat tca	1008
Pro Gly Ser Gly His Ala Pro Arg Thr Ser Ser Ser Ser Asp Asp Ser	
321 326 331 336	
aag aga tca cct ttg ggc aag act cca ctg gga cgc cca gct gtc ccc	1056
Lys Arg Ser Pro Leu Gly Lys Thr Pro Leu Gly Arg Pro Ala Val Pro	
337 342 347 352	
cgt ttt ggc aag cca gat ggg cta agg ggc cgg gga gta ggg tcc cct	1104
Arg Phe Gly Lys Pro Asp Gly Leu Arg Gly Arg Gly Val Gly Ser Pro	
353 358 363 368	
gaa cca ggc cca aca gcc cca tac ctg ggc cga tcg atg tct tac agc	1152

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 tatagtgaac aatcagcaga aaagagtcct tttccagaag agaaaagtca cattatagac 180
 aaagaagaag atataggtaa acgcagtctt tttcattaca caagttctat aaccacaaaa 240
 tttggagact cattctactt tttatcaa atcatattaatt catatttcaa acgtaaggaa 300
 aaa atg tct caa caa aag gaa aat gaa cat ttc cgg gac aaa tca gaa 348
 Met Ser Gln Gln Lys Glu Asn Glu His Phe Arg Asp Lys Ser Glu
 1 5 10
 ctt gaa gat aaa aag gta gaa gag ggg aaa tta aga tct cca gat cct 396
 Leu Glu Asp Lys Lys Val Glu Glu Gly Lys Leu Arg Ser Pro Asp Pro
 16 21 26 31
 ggc atc ctg gct tat aag cca ggc tca gaa tct gta cat acg gtg gac 444
 Gly Ile Leu Ala Tyr Lys Pro Gly Ser Glu Ser Val His Thr Val Asp
 32 37 42 47
 aag cct aca agt cct tct gcg ata cct gat gtt ctt caa gtt tca act 492
 Lys Pro Thr Ser Pro Ser Ala Ile Pro Asp Val Leu Gln Val Ser Thr
 48 53 58 63
 aaa caa agt att gct aac ttt ctt tct cgt ccc acg gaa ggt gta caa 540
 Lys Gln Ser Ile Ala Asn Phe Leu Ser Arg Pro Thr Glu Gly Val Gln
 64 69 74 79
 gct tta gta ggt ggt tat att ggt gga ctt gtc ccc aaa tta aag tat 588
 Ala Leu Val Gly Gly Tyr Ile Gly Gly Leu Val Pro Lys Leu Lys Tyr
 80 85 90 95
 gat tca aag agt cag tca gaa gaa cag gaa gag cct gct aaa act gat 636
 Asp Ser Lys Ser Gln Ser Glu Glu Gln Glu Glu Pro Ala Lys Thr Asp
 96 101 106 111

cag gct gtc agc aaa gac aga aat gca gag gag aaa aag cgt tta tct	684
Gln Ala Val Ser Lys Asp Arg Asn Ala Glu Glu Lys Lys Arg Leu Ser	
112 117 122 127	
ctt cag cga gaa aag att atc gca agg gtg agt att gat aac agg acc	732
Leu Gln Arg Glu Lys Ile Ile Ala Arg Val Ser Ile Asp Asn Arg Thr	
128 133 138 143	
cgg gca tta gtt cag gca tta aga aga aca act gac cca aag ctc tgc	780
Arg Ala Leu Val Gln Ala Leu Arg Arg Thr Thr Asp Pro Lys Leu Cys	
144 149 154 159	
att act agg gtt gaa gaa ctg act ttt cat ctt cta gaa ttt cct gaa	828
Ile Thr Arg Val Glu Glu Leu Thr Phe His Leu Leu Glu Phe Pro Glu	
160 165 170 175	
gga aaa gga gtg gct gtc aag gaa aga att att cca tat tta tta cga	876
Gly Lys Gly Val Ala Val Lys Glu Arg Ile Ile Pro Tyr Leu Leu Arg	
176 181 186 191	
ctg aga caa att aag gat gaa act ctt cag gct gca gtt aga gaa att	924
Leu Arg Gln Ile Lys Asp Glu Thr Leu Gln Ala Ala Val Arg Glu Ile	
192 197 202 207	
ttg gcc cta att ggc tat gtg gat cca gtg aaa ggg aga gga atc cga	972
Leu Ala Leu Ile Gly Tyr Val Asp Pro Val Lys Gly Arg Gly Ile Arg	
208 213 218 223	
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Ile Leu Ser Ile Asp Gly Gly Gly Thr Arg Gly Val Val Ala Leu Gln	
224 229 234 239	
acc cta cga aaa tta gtt gaa ctt act cag aag cca gtt cat cag ctc	1068
Thr Leu Arg Lys Leu Val Glu Leu Thr Gln Lys Pro Val His Gln Leu	
240 245 250 255	
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Phe Asp Tyr Ile Cys Gly Val Ser Thr Gly Ala Ile Leu Ala Phe Met	
256 261 266 271	
ttg ggg ttg ttt cat atg ccc ttg gat gaa tgt gag gaa ctt tat cga	1164
Leu Gly Leu Phe His Met Pro Leu Asp Glu Cys Glu Glu Leu Tyr Arg	
272 277 282 287	
aaa tta gga tca gat gta ttt tca caa aat gtc att gtt gga aca gta	1212
Lys Leu Gly Ser Asp Val Phe Ser Gln Asn Val Ile Val Gly Thr Val	
288 293 298 303	
aaa atg agt tgg agc cat gca ttt tat gac agt caa aca tgg gaa aac	1260
Lys Met Ser Trp Ser His Ala Phe Tyr Asp Ser Gln Thr Trp Glu Asn	
304 309 314 319	
att ctt aag gat agg atg gga tct gca ctg atg att gaa aca gca aga	1308
Ile Leu Lys Asp Arg Met Gly Ser Ala Leu Met Ile Glu Thr Ala Arg	
320 325 330 335	
aac ccc aca tgt cct aag gta gct gct gta agt acc ata gta aat aga	1356

560

gatcaaccac attcaataag gaattgtggg gttcgacatg agttaacttt gaaatacgtg 2095
tgaattctgg agaatcctga aaaagacggg gttcaacca gtttgcatac cacagagaat 2155
attcttgggt acagaattca tatgggaact aggcttttaa gatgttaata attagctaag 2215
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<211> 1279

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (103)..(1092)

<400> 569

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gccgccttcc cgcgccccgc agcgccccgc agagcagtcg ag atg ggt gag tca 114
Met Gly Glu Ser
1

agt gaa gac ata gac caa atg ttc agc act ttg ctg gga gag atg gat 162
Ser Glu Asp Ile Asp Gln Met Phe Ser Thr Leu Leu Gly Glu Met Asp
5 10 15 20

ctt ctg act cag agt tta gga gtt gac act ctc cct cct cct gac cct 210
Leu Leu Thr Gln Ser Leu Gly Val Asp Thr Leu Pro Pro Pro Asp Pro
21 26 31 36

aat cca ccc aga gct gaa ttt aac tac agt gtg ggg ttt aaa gat tta 258
Asn Pro Pro Arg Ala Glu Phe Asn Tyr Ser Val Gly Phe Lys Asp Leu
37 42 47 52

aat gag tcc tta aat gca ctg gaa gac caa gat tta gat gct ctc atg 306
Asn Glu Ser Leu Asn Ala Leu Glu Asp Gln Asp Leu Asp Ala Leu Met
53 58 63 68

gca gat ctg gta gca gac ata agt gag gct gag cag agg aca atc cag 354
Ala Asp Leu Val Ala Asp Ile Ser Glu Ala Glu Gln Arg Thr Ile Gln
69 74 79 84

gca cag aaa gag tcc ttg cag aat caa cat cat tca gca tct cta caa 402
Ala Gln Lys Glu Ser Leu Gln Asn Gln His His Ser Ala Ser Leu Gln
85 90 95 100

gca tca att ttc agt ggt gca gcc tct ctt ggt tat gga aca aat gtt 450
Ala Ser Ile Phe Ser Gly Ala Ala Ser Leu Gly Tyr Gly Thr Asn Val

101	106	111	116	
gct gcc act ggt atc agc caa tat gag gat gac tta cca cct cca cca				498
Ala Ala Thr Gly Ile Ser Gln Tyr Glu Asp Asp Leu Pro Pro Pro Pro				
117	122	127	132	
gcc gat cct gtg tta gac ctt cca ctg cca cca cca cct cct gaa cct				546
Ala Asp Pro Val Leu Asp Leu Pro Leu Pro Pro Pro Pro Pro Glu Pro				
133	138	143	148	
ctc tct cag gaa gag gaa gaa gcc caa gcc aag gct gat aaa att aag				594
Leu Ser Gln Glu Glu Glu Glu Ala Gln Ala Lys Ala Asp Lys Ile Lys				
149	154	159	164	
ctg gcg ctg gaa aaa ctg aag gag gcc aag gtt aag aag ctc gtc gtc				642
Leu Ala Leu Glu Lys Leu Lys Glu Ala Lys Val Lys Lys Leu Val Val				
165	170	175	180	
aag gtg cac atg aat gat aac agc aca aag tca ctg atg gtg gat gag				690
Lys Val His Met Asn Asp Asn Ser Thr Lys Ser Leu Met Val Asp Glu				
181	186	191	196	
cgg cag ctg gcc cga gat gtt ctg gac aac ctt ttc gag aaa act cat				738
Arg Gln Leu Ala Arg Asp Val Leu Asp Asn Leu Phe Glu Lys Thr His				
197	202	207	212	
tgt gac tgc aat gta gac tgg tgt ctt tat gaa atc tac ccg gaa cta				786
Cys Asp Cys Asn Val Asp Trp Cys Leu Tyr Glu Ile Tyr Pro Glu Leu				
213	218	223	228	
caa att gag agg ttt ttt gaa gac cat gaa aat gtt gtt gaa gtc tta				834
Gln Ile Glu Arg Phe Phe Glu Asp His Glu Asn Val Val Glu Val Leu				
229	234	239	244	
tca gac tgg aca aga gac aca gaa aat aaa ata cta ttt ttg gag aaa				882
Ser Asp Trp Thr Arg Asp Thr Glu Asn Lys Ile Leu Phe Leu Glu Lys				
245	250	255	260	
gag gag aaa tat gct gta ttt aaa aac ccc cag aat ttc tac ttg gat				930
Glu Glu Lys Tyr Ala Val Phe Lys Asn Pro Gln Asn Phe Tyr Leu Asp				
261	266	271	276	
aac aga gga aaa aaa gaa agc aag gaa act aat gag aaa atg aat gct				978
Asn Arg Gly Lys Lys Glu Ser Lys Glu Thr Asn Glu Lys Met Asn Ala				
277	282	287	292	
aag aac aag gaa tcc tta ctt gag gta agg tta att ttg cag agt gga				1026
Lys Asn Lys Glu Ser Leu Leu Glu Val Arg Leu Ile Leu Gln Ser Gly				
293	298	303	308	
aga aaa gag aag gac gtt tgc tct att ttt aag tca ttt gct tcc gag				1074
Arg Lys Glu Lys Asp Val Cys Ser Ile Phe Lys Ser Phe Ala Ser Glu				
309	314	319	324	
aac aat gga aaa atc taa agacat acactgaaat tttaagttgg ggtgttaaaa				1128
Asn Asn Gly Lys Ile *				
325	330			

tcaaattatt tctaaattat agctatttag ataattcaac tgtttttctt ttttgagtca 1188
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 atcttcagct tctgcccac gcgcgcgctg gccgccctca agtgcacctg ccaccacttc 180
 aagggcacatc tcgaggcggt tggcgtgctg gccacagact cgcgctggag ccgagacccg 240
 ctctaccgcg atg atc cgt gca aac agt gcc gca aga gat acg aga agg 289
 Met Ile Arg Ala Asn Ser Ala Ala Arg Asp Thr Arg Arg
 1 5 10
 gcg acg tgt cgc tct gcc gct ggc acc cca agc cct acc acc atg acc 337
 Ala Thr Cys Arg Ser Ala Ala Gly Thr Pro Ser Pro Thr Thr Met Thr
 14 19 24 29
 tgc ctt acg gac gtt cct act gga tgt gct gcc gtc gag ccg acc gcg 385
 Cys Leu Thr Asp Val Pro Thr Gly Cys Ala Val Glu Pro Thr Ala
 30 35 40 45
 aga ctc ccg gct gcc gcc tgg gcc tcc acg ata aca act ggg tgc tgc 433
 Arg Leu Pro Ala Ala Ala Trp Ala Ser Thr Ile Thr Thr Gly Cys Cys
 46 51 56 61
 cct gca atg ggc cag gcg ggg gcc ggg ccg gcc ggg agg aag gga agt 481
 Pro Ala Met Gly Gln Ala Gly Ala Gly Pro Ala Gly Arg Lys Gly Ser
 62 67 72 77
 gaa gcc ggg gga ggg ccg ggg aga gcc cac cac gcc cac ccc tcc cct 529
 Glu Ala Gly Gly Gly Pro Gly Arg Ala His His Ala His Pro Ser Pro
 78 83 88 93
 ctc ccc ccg gag ccg agg gtc ccg act ggg ccg cct gcc cat tcc cct 577
 Leu Pro Arg Glu Pro Arg Val Arg Thr Gly Pro Pro Ala His Ser Pro
 94 99 104 109
 act cca ggc agc att gat ccc tca ccg gaa ctg agc tgg ggt tca gca 625

Thr	Pro	Gly	Ser	Ile	Asp	Pro	Ser	Pro	Glu	Leu	Ser	Trp	Gly	Ser	Ala		
110					115					120					125		
ggg	gtg	acc	cag	gaa	agc	cct	ctg	ctt	gat	cct	gtt	gat	ttt	cta	ctc		673
Gly	Val	Thr	Gln	Glu	Ser	Pro	Leu	Leu	Asp	Pro	Val	Asp	Phe	Leu	Leu		
126					131					136					141		
ttc	aga	acc	agg	gcc	gtg	gac	cct	ctg	aga	agg	gtg	ttt	ttt	ttt	ttt		721
Phe	Arg	Thr	Arg	Ala	Val	Asp	Pro	Leu	Arg	Arg	Val	Phe	Phe	Phe	Phe		
142					147					152					157		
tat	cag	cat	ctc	act	ttc	ttc	tcc	att	cag	ccc	caa	ccc	cct	ccc	tgc		769
Tyr	Gln	His	Leu	Thr	Phe	Phe	Ser	Ile	Gln	Pro	Gln	Pro	Pro	Pro	Cys		
158					163					168					173		
cat	gct	ttc	cac	ccc	aag	gac	cca	cca	gca	ggg	agc	aga	cgg	cag	cta		817
His	Ala	Phe	His	Pro	Lys	Asp	Pro	Pro	Ala	Gly	Ser	Arg	Arg	Gln	Leu		
174					179					184					189		
att	ttg	gta	cca	ctt	aag	ggt	ccc	ccc	att	ctg	gcc	ccc	atc	ctc	tcc		865
Ile	Leu	Val	Pro	Leu	Lys	Gly	Pro	Pro	Ile	Leu	Ala	Pro	Ile	Leu	Ser		
190					195					200					205		
ctc	acc	cca	att	ctt	tct	cgc	tgg	agc	tgt	tat	ttc	cca	aga	agc	cgc		913
Leu	Thr	Pro	Ile	Leu	Ser	Arg	Trp	Ser	Cys	Tyr	Phe	Pro	Arg	Ser	Arg		
206					211					216					221		
atc	gcc	caa	ggt	tgg	cac	ctc	tcc	taa	cctgc	cacacgacag	ctctcacctc						965
Ile	Ala	Gln	Gly	Trp	His	Leu	Ser	*									
222					227												
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tttctagatg	gtttgcctat	taaagaagtg	gggggggaaat	actgtttttct	ccttaacctc												1085
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aagtataaaa	accctcctcc	tcccgttatt	atttaagcta	ctgccatcaa	ccccaccccc												1205
ataaagctgt	gaagcccttt	gcctcgcttt	tgacagcgtg	ggggggcccc	gtgggcaggg												1265
acttcggatt	tgcatctctg	ggttgttttt	ccttccactc	tggggtctcg	ttcaggcatt												1325
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atcttttcagg	catttttggtc	tggggtatatt	ttgtttgttc	tctctgtttt	ttgttttctt												1445
ttttttcttt	ccatcggtgt	tctggaagct	tctagcgtgt	ggcatctgac	caattttgaa												1505
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1 5 10

ctg cac cgg cct ttc tac ccg gct gtc gag ggc acc ctg tgc ctg acg 96
Leu His Arg Pro Phe Tyr Pro Ala Val Glu Gly Thr Leu Cys Leu Thr
17 22 27 32

ggc cac cac ttg atc ctg tcc tcc cgg cag gac aat acg gag gag ctg 144
Gly His His Leu Ile Leu Ser Ser Arg Gln Asp Asn Thr Glu Glu Leu
33 38 43 48

tgg ctc ctc cat tca aac atc gac gcc atc gac aag cga ttt gta gga 192
Trp Leu Leu His Ser Asn Ile Asp Ala Ile Asp Lys Arg Phe Val Gly
49 54 59 64

tca ctg ggt acc atc atc ata aaa tgt aaa gat ttt cga att att cag 240
Ser Leu Gly Thr Ile Ile Ile Lys Cys Lys Asp Phe Arg Ile Ile Gln
65 70 75 80

ttg gat att cct gga atg gag gaa tgc ttg aat ata gcc agt tcc att 288
Leu Asp Ile Pro Gly Met Glu Glu Cys Leu Asn Ile Ala Ser Ser Ile
81 86 91 96

gag gca ttg tct act ctg gac tcc atc act ctg atg tac cct ttc ttt 336
Glu Ala Leu Ser Thr Leu Asp Ser Ile Thr Leu Met Tyr Pro Phe Phe
97 102 107 112

tac cgt cct atg ttt gaa gtg ata gaa gat ggc tgg cat tcc ttc ctt 384
Tyr Arg Pro Met Phe Glu Val Ile Glu Asp Gly Trp His Ser Phe Leu
113 118 123 128

cct gag caa gaa ttt gaa ctc tat tct tca gct acc agt gaa tgg agg 432
Pro Glu Gln Glu Phe Glu Leu Tyr Ser Ser Ala Thr Ser Glu Trp Arg
129 134 139 144

cta agc tat gtc aat aag gaa ttt gct gtc tgt ccc tct tac cca cca 480
Leu Ser Tyr Val Asn Lys Glu Phe Ala Val Cys Pro Ser Tyr Pro Pro
145 150 155 160

att gtc aca gtg ccc aaa tcc atc gat gat gaa gct ctt cgg aag gta 528
Ile Val Thr Val Pro Lys Ser Ile Asp Asp Glu Ala Leu Arg Lys Val
161 166 171 176

gct aca ttt cga cat gga ggg cgc ttc cca gta cta agc tat tac cac 576
Ala Thr Phe Arg His Gly Gly Arg Phe Pro Val Leu Ser Tyr Tyr His
177 182 187 192

aaa aga aat ggg atg gta att atg cga agt ggt cag cca ctc act ggt 624
Lys Arg Asn Gly Met Val Ile Met Arg Ser Gly Gln Pro Leu Thr Gly

193	198	203	208	
aca aac ggg agg agg tgc aag gag gac gag aag ctg ata aat gct acc				672
Thr Asn Gly Arg Arg Cys Lys Glu Asp Glu Lys Leu Ile Asn Ala Thr				
209	214	219	224	
ctc agg gct gga aag cgt ggc tac atc att gac acc cga tcc ctg aac				720
Leu Arg Ala Gly Lys Arg Gly Tyr Ile Ile Asp Thr Arg Ser Leu Asn				
225	230	235	240	
gtg gct cag caa act aga gcc aaa gga ggt ggc ttt gaa caa gaa gct				768
Val Ala Gln Gln Thr Arg Ala Lys Gly Gly Gly Phe Glu Gln Glu Ala				
241	246	251	256	
cat tat cct cag tgg agg cga att cat aag tcc att gag agg tat cac				816
His Tyr Pro Gln Trp Arg Arg Ile His Lys Ser Ile Glu Arg Tyr His				
257	262	267	272	
att ctt cag gag agc tta atc aaa ctt gtg gaa gct tgt aat gac caa				864
Ile Leu Gln Glu Ser Leu Ile Lys Leu Val Glu Ala Cys Asn Asp Gln				
273	278	283	288	
aca cat aac atg gac cga tgg ctc agt aaa ttg gag gcc tct aac tgg				912
Thr His Asn Met Asp Arg Trp Leu Ser Lys Leu Glu Ala Ser Asn Trp				
289	294	299	304	
ctg act cac atc aaa gag att ctg aca acc gcc tgc cta gcg gct cag				960
Leu Thr His Ile Lys Glu Ile Leu Thr Thr Ala Cys Leu Ala Ala Gln				
305	310	315	320	
tgc atc gac agg gaa gga gca tca ata ttg att cac gga aca gaa gga				1008
Cys Ile Asp Arg Glu Gly Ala Ser Ile Leu Ile His Gly Thr Glu Gly				
321	326	331	336	
act gat tcc aca ctc cag gtg acc tcc ttg gcc cag atc atc tta gag				1056
Thr Asp Ser Thr Leu Gln Val Thr Ser Leu Ala Gln Ile Ile Leu Glu				
337	342	347	352	
cca aga agc agg acc att cgt ggt ttt gag gcc ctg att gaa aga gag				1104
Pro Arg Ser Arg Thr Ile Arg Gly Phe Glu Ala Leu Ile Glu Arg Glu				
353	358	363	368	
tgg ctg cag gct ggt cac cca ttc cag cag cgc tgt gca cag tca gcc				1152
Trp Leu Gln Ala Gly His Pro Phe Gln Gln Arg Cys Ala Gln Ser Ala				
369	374	379	384	
tac tgt aac acc aag cag aag tgg gag gct cct gta ttt ctt ctc ttc				1200
Tyr Cys Asn Thr Lys Gln Lys Trp Glu Ala Pro Val Phe Leu Leu Phe				
385	390	395	400	
ttg gac tgc gtg tgg cag atc ctt cgt cag ttt ccc tgt tct ttt gag				1248
Leu Asp Cys Val Trp Gln Ile Leu Arg Gln Phe Pro Cys Ser Phe Glu				
401	406	411	416	
ttt aat gag att ttc ctc atc atg ctc ttt gag cat gct tat gcc tca				1296
Phe Asn Glu Ile Phe Leu Ile Met Leu Phe Glu His Ala Tyr Ala Ser				
417	422	427	432	

cag ttt gga aca ttt ctg ggc aac aat gaa agt gaa aga tgt aag ttg	1344
Gln Phe Gly Thr Phe Leu Gly Asn Asn Glu Ser Glu Arg Cys Lys Leu	
433 438 443 448	
aag cta cag cag aag acg atg tct ttg tgg tcc tgg gtt aat cag ccc	1392
Lys Leu Gln Gln Lys Thr Met Ser Leu Trp Ser Trp Val Asn Gln Pro	
449 454 459 464	
agt gag ctg agt aaa ttc acc aat ccc ctc ttt gaa gcc aac aac ctt	1440
Ser Glu Leu Ser Lys Phe Thr Asn Pro Leu Phe Glu Ala Asn Asn Leu	
465 470 475 480	
gtc atc tgg cct tca gtt gct ccg cag agt ctt cca ctg tgg gaa ggt	1488
Val Ile Trp Pro Ser Val Ala Pro Gln Ser Leu Pro Leu Trp Glu Gly	
481 486 491 496	
att ttc cta cgt tgg aat aga tcc tct aag tat ttg gat gaa gca tat	1536
Ile Phe Leu Arg Trp Asn Arg Ser Ser Lys Tyr Leu Asp Glu Ala Tyr	
497 502 507 512	
gaa gaa atg gtt aac atc att gaa tat aat aaa gaa tta caa gca aaa	1584
Glu Glu Met Val Asn Ile Ile Glu Tyr Asn Lys Glu Leu Gln Ala Lys	
513 518 523 528	
gtc aat atc ctt cga agg cag ttg gca gaa ctg gaa aca gag gac ggg	1632
Val Asn Ile Leu Arg Arg Gln Leu Ala Glu Leu Glu Thr Glu Asp Gly	
529 534 539 544	
atg cag gag agt ccc tga aaggctc tctctgcacc ctctcgcaagg accttcttgg	1686
Met Gln Glu Ser Pro *	
545 550	
gcctgtgtcc gccgttctct ccttgtgccc ttcagttcac ttttacacgg tagccttgaa	1746
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gtttattttt	gacttacttt	ctttgctgta	gttatgaacc	ttggggcatt	aaaatcccat	3306
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ttgttaaaaa	aaaaaaaaag	tcgagcggcc	gcgaagcgag	tagtagtagg	cggccgctct	3426
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120		

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Thr/Val Val Gly Leu Val Ser Ser Leu Leu Gly Gly Thr Phe Val Gly				
219	224	229	234	
att gca tac ttc ctc aca cag ctg att ttt gtg aat gat tta gac att				951
Ile Ala Tyr Phe Leu Thr Gln Leu Ile Phe Val Asn Asp Leu Asp Ile				
235	240	245	250	
tct gcc ccg cag tgg cca att att gca ttt ggt ggt tta gct gga tta				999
Ser Ala Pro Gln Trp Pro Ile Ile Ala Phe Gly Gly Leu Ala Gly Leu				
251	256	261	266	
cta gga tca att gtg gac tca tac tta ggg gct aca atg cag tat act				1047
Leu Gly Ser Ile Val Asp Ser Tyr Leu Gly Ala Thr Met Gln Tyr Thr				
267	272	277	282	
ggg ttg gat gaa agc act ggc atg gtg gtc aac agc cca aca aat aag				1095
Gly Leu Asp Glu Ser Thr Gly Met Val Val Asn Ser Pro Thr Asn Lys				
283	288	293	298	
gca agg cac ata gca ggg aaa ccc att ctt gat aac aac gca gtg aat				1143
Ala Arg His Ile Ala Gly Lys Pro Ile Leu Asp Asn Asn Ala Val Asn				
299	304	309	314	
ctg ttt tct tct gtt ctt att gcc ctc ttg ctc cca act gct gct tgg				1191
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315	320	325	330	
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ctacacatag aggagccgtg agcaactctc tgg atg ctg tgt atc cta aag ttg	354
Met Leu Cys Ile Leu Lys Leu	
1 5	
gct tcc cag atg cca ctg gag aac acc acg gtt cag cag atg gtt ttt	402
Ala Ser Gln Met Pro Leu Glu Asn Thr Thr Val Gln Gln Met Val Phe	
8 13 18 23	

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Met Leu Leu Ser Asn Leu Ala Leu Ser His Asp Cys Lys Gly Val Ile	
24 29 34 39	
cag aag agt aac ttc tta cag aac ttc ctc tct cta gca ttg cca aaa	498
Gln Lys Ser Asn Phe Leu Gln Asn Phe Leu Ser Leu Ala Leu Pro Lys	
40 45 50 55	
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Gly Gly Asn Lys His Leu Ser Asn Leu Thr Ile Leu Trp Leu Lys Leu	
56 61 66 71	
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Leu Leu Asn Ile Ser Ser Gly Glu Asp Gly Gln Gln Met Ile Leu Arg	
72 77 82 87	
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Leu Asp Gly Cys Leu Asp Leu Leu Thr Glu Met Ser Lys Tyr Lys His	
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aag agc agc cct tta ttg cct ctt ctt atc ttt cat aat gtt tgc ttc	690
Lys Ser Ser Pro Leu Leu Pro Leu Leu Ile Phe His Asn Val Cys Phe	
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Ser Pro Ala Asn Lys Pro Lys Ile Leu Ala Asn Glu Lys Val Ile Thr	
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Val Leu Ala Ala Cys Leu Glu Ser Glu Asn Gln Asn Ala Gln Arg Ile	
136 141 146 151	
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Gly Ala Ala Ala Leu Trp Ala Leu Ile Tyr Asn Tyr Gln Lys Ala Lys	
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Thr Ala Leu Lys Ser Pro Ser Val Lys Arg Arg Val Asp Glu Ala Tyr	
168 173 178 183	
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Ser Leu Ala Lys Lys Thr Pro *	
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५३

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Leu Pro Phe Leu Pro Asp Ser Pro Arg Tyr Leu Leu Leu Glu Lys His	
117 122 127 132	
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Asn Glu Ala Arg Ala Val Lys Ala Phe Gln Thr Phe Leu Gly Lys Ala	
133 138 143 148	
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His Val Ser Gln Glu Val Glu Glu Val Leu Ala Glu Ser Arg Val Gln	
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agg agc atc cgc ctg gtg tcc gtg ctg gag ctg ctg aga gct ccc tac	884
Arg Ser Ile Arg Leu Val Ser Val Leu Glu Leu Leu Arg Ala Pro Tyr	
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gtc cgc tgg cag gtg gtc acc gtg att gtc acc atg gcc tgc tac cag	932
Val Arg Trp Gln Val Val Thr Val Ile Val Thr Met Ala Cys Tyr Gln	
181 186 191 196	
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Leu Cys Gly Leu Asn Ala Ile Trp Phe Tyr Thr Asn Ser Ile Phe Gly	
197 202 207 212	
aaa gct ggg atc cct ccg gca aag atc cca tac gtc acc ttg agt aca	1028
Lys Ala Gly Ile Pro Pro Ala Lys Ile Pro Tyr Val Thr Leu Ser Thr	
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His Leu Gly Arg Arg Pro Leu Leu Ile Gly Gly Phe Gly Leu Met Gly	
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Leu Phe Phe Gly Thr Leu Thr Ile Thr Leu Thr Leu Gln Asp His Ala	
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Pro Trp Val Pro Tyr Leu Ser Ile Val Gly Ile Leu Ala Ile Ile Ala	
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Val Asn Trp Leu Ser Asn Phe Ala Val Gly Leu Leu Phe Pro Phe Ile	

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Ile Thr Gly Ala Ile Tyr Leu Tyr Phe Val Leu Pro Glu Thr Lys Asn				
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aga acc tat gca gaa atc agc cag gca ttt tcc aaa agg aac aaa gca				1508
Arg Thr Tyr Ala Glu Ile Ser Gln Ala Phe Ser Lys Arg Asn Lys Ala				
373	378	383	388	
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Tyr Pro Pro Glu Glu Lys Ile Asp Ser Ala Val Thr Asp Gly Lys Ile				
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 Met
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 Met Ala Ala Val Pro Pro Gly Leu Glu Pro Trp Asn Arg Val Arg Ile
 2 7 12 17
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 Pro Lys Ala Gly Asn Arg Ser Ala Val Thr Val Gln Asn Pro Gly Ala
 18 23 28 33
 gcc ctt gac ctt tgc att gca gct gta att aaa gaa tgc cat ctc gtc 439
 Ala Leu Asp Leu Cys Ile Ala Ala Val Ile Lys Glu Cys His Leu Val
 34 39 44 49
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 Ile Leu Ser Leu Lys Ser Gln Thr Leu Asp Ala Glu Thr Asp Val Leu
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 Cys Ala Val Leu Tyr Ser Asn His Asn Arg Met Gly Arg His Lys Pro
 66 71 76 81

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His Leu Ala Leu Lys Gln Val Glu Gln Cys Leu Lys Arg Leu Lys Asn	
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Met Asn Leu Glu Gly Ser Ile Gln Asp Leu Phe Glu Leu Phe Ser Ser	
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Asn Glu Asn Gln Pro Leu Thr Thr Lys Val Cys Val Val Pro Ser Gln	
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Pro Val Val Glu Leu Val Leu Met Lys Val Leu Gly Ala Cys Lys Leu	
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162 167 172 177	
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Leu Gly Ile Ser Lys Lys Ala Lys Gln Met Lys Ile Asn Val Gln Asn	
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290 295 300 305	
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Glu Ser Ser Glu Phe Asp Val Arg Ala Phe Cys Asn Gln Leu Lys His	
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Lys Ala Thr Gln Glu Thr Ser Phe Asp Phe Lys Cys Ser Gln Ser Arg	
322 327 332 337	
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Leu Lys Thr Thr Lys Tyr Ser Ser Gln Lys Val Ile Gly Thr Pro His	
338 343 348 353	
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Ala Lys Ser Phe Val Gln Arg Phe Arg Glu Ala Glu Ser Phe Thr Gln	
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Leu Ser Glu Glu Ile Gln Met Ala Val Val Trp Cys Arg Ser Lys Lys	
370 375 380 385	
ctc aag gct cag gcc att ttt ctg ggt aac aaa ctt ctt aaa agc aac	1495
Leu Lys Ala Gln Ala Ile Phe Leu Gly Asn Lys Leu Leu Lys Ser Asn	
386 391 396 401	
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Arg Leu Lys His Leu Glu Ala Gln Gly Thr Ser Leu Pro Lys Lys Leu	
402 407 412 417	
gag tgc ata aaa acg tct att tgc aac cac ctt ctt cgt ggc tca ggt	1591
Glu Cys Ile Lys Thr Ser Ile Cys Asn His Leu Leu Arg Gly Ser Gly	
418 423 428 433	
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Ile Lys Thr Ser Lys His His Leu Arg Gln Arg Arg Ser Gln Asn Lys	
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Phe Leu Arg Arg Gln Arg Lys Pro Gln Arg Lys Leu Gln Ser Thr Leu	
450 455 460 465	
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Leu Arg Glu Ile Gln Gln Phe Ser Gln Gly Thr Arg Lys Ser Ala Thr	
466 471 476 481	
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Met Ala Ala Val Pro Pro Gly Leu Glu Pro Trp Asn Arg Val Arg Ile
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cct aag gcg ggg aac cgc agc gca gtg aca gtg cag aac ccc ggc gcg      391
Pro Lys Ala Gly Asn Arg Ser Ala Val Thr Val Gln Asn Pro Gly Ala
  18              23              28              33

gcc ttg gtt gag caa tgt tta aag cgt ttg aaa aac atg aat ttg gag      439
Ala Leu Val Glu Gln Cys Leu Lys Arg Leu Lys Asn Met Asn Leu Glu
  34              39              44              49

ggc tca att caa gac ctg ttt gag ttg ttt tct tcc aat gaa aat cag      487
Gly Ser Ile Gln Asp Leu Phe Glu Leu Phe Ser Ser Asn Glu Asn Gln
  50              55              60              65

ccc tta act acc aaa gta tgt gtt gtc ccc agt cag cca gtg gtg gag      535
Pro Leu Thr Thr Lys Val Cys Val Val Pro Ser Gln Pro Val Val Glu
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ttg gtg ttg atg aag gtt ttg gga gcc tgc aag ttg ttg ctc cgc ttg      583
Leu Val Leu Met Lys Val Leu Gly Ala Cys Lys Leu Leu Leu Arg Leu
  82              87              92              97

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Leu Gln Glu Phe Ile Ile Leu Asn Leu Val Met Val Gly Leu Val Ser	
114 119 124 129	
agg tta tgg gtt ctc tat aaa ggt gtc tta aaa agg ttg att ttg tta	727
Arg Leu Trp Val Leu Tyr Lys Gly Val Leu Lys Arg Leu Ile Leu Leu	
130 135 140 145	
tat gag cct ttg ttt gga ttg ctt caa gag gtc gct agg att caa cca	775
Tyr Glu Pro Leu Phe Gly Leu Leu Gln Glu Val Ala Arg Ile Gln Pro	
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Met Pro Tyr Phe Lys Asp Phe Thr Phe Pro Ser Asp Ile Thr Glu Phe	
162 167 172 177	
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Leu Gly Gln Pro Tyr Phe Glu Ala Phe Lys Lys Lys Met Pro Ile Ala	
178 183 188 193	
ttt gca gct aaa gga ata aat aaa ttg cta aat aaa ctg ttt tta ata	919
Phe Ala Ala Lys Gly Ile Asn Lys Leu Leu Asn Lys Leu Phe Leu Ile	
194 199 204 209	
aat gag cag tca cca aga gcc agt gaa gaa acc ttg ctt gga att tca	967
Asn Glu Gln Ser Pro Arg Ala Ser Glu Glu Thr Leu Leu Gly Ile Ser	
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aaa aaa gct aaa caa atg aag atc aat gta cag aat aat gtg gat ctt	1015
Lys Lys Ala Lys Gln Met Lys Ile Asn Val Gln Asn Asn Val Asp Leu	
226 231 236 241	
gga cag cca gta aag aat aag aga gtc ttc aaa gaa gag tca tca gaa	1063
Gly Gln Pro Val Lys Asn Lys Arg Val Phe Lys Glu Glu Ser Ser Glu	
242 247 252 257	
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Phe Asp Val Arg Ala Phe Cys Asn Gln Leu Lys His Lys Ala Thr Gln	
258 263 268 273	
gag acc agt ttt gat ttt aaa tgt tct caa tcc aga cta aag aca acc	1159
Glu Thr Ser Phe Asp Phe Lys Cys Ser Gln Ser Arg Leu Lys Thr Thr	
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Lys Tyr Ser Ser Gln Lys Val Ile Gly Thr Pro His Ala Lys Ser Phe	
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Val Gln Arg Phe Arg Glu Ala Glu Ser Phe Thr Gln Leu Ser Glu Glu	
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Ile Gln Met Ala Val Val Trp Cys Arg Ser Lys Lys Leu Lys Ala Gln	
322 327 332 337	
gcc att ttt ctg ggt aac aaa ctt ctt aaa agc aac cgg ctt aaa cat	1351
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ctg gaa gct caa ggt act agt ttg cca aag aaa cta gag tgc ata aaa	1399
Leu Glu Ala Gln Gly Thr Ser Leu Pro Lys Lys Leu Glu Cys Ile Lys	
354 359 364 369	
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Thr Ser Ile Cys Asn His Leu Leu Arg Gly Ser Gly Ile Lys Thr Ser	
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Lys His His Leu Arg Gln Arg Arg Ser Gln Asn Lys Phe Leu Arg Arg	
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caa agg aaa cca cag aga aag ttg cag tcg act ctt tta agg gaa att	1543
Gln Arg Lys Pro Gln Arg Lys Leu Gln Ser Thr Leu Leu Arg Glu Ile	
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cag cag ttc tct caa ggg act cgg aag agt gct aca gat acc agt gct	1591
Gln Gln Phe Ser Gln Gly Thr Arg Lys Ser Ala Thr Asp Thr Ser Ala	
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Lys Trp Arg Leu Ser His Cys Thr Val His Arg Thr Asp Leu Tyr Pro	
434 439 444 449	
aac agt aag cag ctc ttg aat agt gga gtt tca atg cct gtc ata caa	1687
Asn Ser Lys Gln Leu Leu Asn Ser Gly Val Ser Met Pro Val Ile Gln	
450 455 460 465	
act aag gag aaa atg att cat gaa aat ctt aga ggc atc cat gaa aat	1735
Thr Lys Glu Lys Met Ile His Glu Asn Leu Arg Gly Ile His Glu Asn	
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gaa act gat tcg tgg acg gtg atg caa ata aat aaa aac agt aca tca	1783
Glu Thr Asp Ser Trp Thr Val Met Gln Ile Asn Lys Asn Ser Thr Ser	
482 487 492 497	
gga acc att aag gag aca gat gac att gat gat att ttt gct tta atg	1831
Gly Thr Ile Lys Glu Thr Asp Asp Ile Asp Asp Ile Phe Ala Leu Met	
498 503 508 513	
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Gly Val *	
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ttttcatatt cctgaattcc accacactgg actagtggat ccgagctcgg taccaagctt	3267
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Val Asn Leu Asn Asn Ile Lys Asn Ile Pro Ile Pro Thr Leu Lys Asp	
203 208 213 218	
ttt gca aag gct ttg gaa acc aac aca cat gtg aaa tgt ttc agt ctt	962
Phe Ala Lys Ala Leu Glu Thr Asn Thr His Val Lys Cys Phe Ser Leu	
219 224 229 234	
gca gcc acc cgg agc aat gac cct gtt gct act gct ttt gca gaa atg	1010
Ala Ala Thr Arg Ser Asn Asp Pro Val Ala Thr Ala Phe Ala Glu Met	
235 240 245 250	
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Leu Lys Val Asn Lys Thr Leu Lys Ser Leu Asn Val Glu Ser Asn Phe	
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Ile Thr Gly Val Gly Ile Leu Ala Leu Ile Asp Ala Leu Arg Asp Asn	
267 272 277 282	
gaa acc ctg gca gag ctc aag att gac aat cag agg cag cag ttg ggg	1154
Glu Thr Leu Ala Glu Leu Lys Ile Asp Asn Gln Arg Gln Gln Leu Gly	
283 288 293 298	
aca gct gta gaa ttg gaa atg gcc aag atg ctt gag gaa aat aca aat	1202
Thr Ala Val Glu Leu Glu Met Ala Lys Met Leu Glu Glu Asn Thr Asn	
299 304 309 314	
atc ctt aaa ttt gga tat cag ttt aca cag cag gga cca cga acc aga	1250
Ile Leu Lys Phe Gly Tyr Gln Phe Thr Gln Gln Gly Pro Arg Thr Arg	
315 320 325 330	
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Ala Ala Asn Ala Ile Thr Lys Asn Asn Asp Leu Val Arg Lys Arg Arg	
331 336 341 346	
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Val Glu Gly Asp His Gln *	
347 352	
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aatttagttt aattgaatga tttatgatga atcttgggca aaaaaataca actgtaaaaa	1591
atttcacagg tcatttgtgt agaataattt gaacattgtg aggaccaatc ttttttaa	1651
caaaagggat gttgctggta tcagaattgt tattgcttca tttagacata aaacacttaa	1711
gtgttttctt tcaactccgtg acctggagag ttttccattt tttgcaagtt tagtactgcc	1771
caaatttact cattctacag tgttactgca ctttgaacgt attgacccat gtcacccaag	1831

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agaagcaaac atatggatgc actagagaca actcggggtg ctgctctcag ttaagggeta 1891
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cactaattat ttttaaattg agaaaatagt attcagaggc aaagattttt atattctttt 2071
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Met Ser Ala Trp
1
gct gct gcc agc cta agc agg gcc gct gcc gaa tgc ttg ctg gca cga 164
Ala Ala Ala Ser Leu Ser Arg Ala Ala Ala Glu Cys Leu Leu Ala Arg
5 10 15 20
ggc ccc ggg gtc agg gcg gct cct ccg cgc gac ccc cgg ccc tcc cac 212
Gly Pro Gly Val Arg Ala Ala Pro Pro Arg Asp Pro Arg Pro Ser His
21 26 31 36
ccc gag ccc cgg ggc tgc ggt gcc gct ccg ggc agg acg ctg cac ttt 260
Pro Glu Pro Arg Gly Cys Gly Ala Ala Pro Gly Arg Thr Leu His Phe
37 42 47 52
acc gcg gct gtc ccc gcc ggg cac aac aag tgg tcc aaa gtc agg cac 308
Thr Ala Ala Val Pro Ala Gly His Asn Lys Trp Ser Lys Val Arg His
53 58 63 68
atc aag ggt ccg aag gac gtc gaa agg agt cgc atc ttc tcc aaa ctc 356
Ile Lys Gly Pro Lys Asp Val Glu Arg Ser Arg Ile Phe Ser Lys Leu
69 74 79 84
tgt ttg aac atc cgc ctg gca gtg aaa gaa gga ggc ccc aac cct gag 404
Cys Leu Asn Ile Arg Leu Ala Val Lys Glu Gly Gly Pro Asn Pro Glu
85 90 95 100
cac aac agc aac ctg gcc aat atc tta gag gtg tgt cgc agc aaa cat 452
His Asn Ser Asn Leu Ala Asn Ile Leu Glu Val Cys Arg Ser Lys His
101 106 111 116

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117 122 127 132	
 gac act tat ttg ctg tat gag ggt cga ggc cct ggt ggc tct tct ctg	548
Asp Thr Tyr Leu Leu Tyr Glu Gly Arg Gly Pro Gly Gly Ser Ser Leu	
133 138 143 148	
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Leu Ile Glu Ala Leu Ser Asn Ser Ser His Lys Cys Gln Ala Asp Ile	
149 154 159 164	
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Arg His Ile Leu Asn Lys Asn Gly Gly Val Met Ala Val Gly Ala Arg	
165 170 175 180	
 cac tct ttt gac aaa aag ggg gtg att gtg gtt gaa gtg gag gac aga	692
His Ser Phe Asp Lys Lys Gly Val Ile Val Val Glu Val Glu Asp Arg	
181 186 191 196	
 gag aag aag gct gtg aac cta gag cgt gcc ctg gag atg gca atc gaa	740
Glu Lys Lys Ala Val Asn Leu Glu Arg Ala Leu Glu Met Ala Ile Glu	
197 202 207 212	
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Ala Gly Ala Glu Asp Val Lys Glu Thr Glu Asp Glu Glu Glu Arg Asn	
213 218 223 228	
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Val Phe Lys Phe Ile Cys Asp Ala Ser Ser Leu His Gln Val Arg Lys	
229 234 239 244	
 aag ctg gac tcc ctg ggc ctg tgt tct gtg tcc tgt gca cta gag ttc	884
Lys Leu Asp Ser Leu Gly Leu Cys Ser Val Ser Cys Ala Leu Glu Phe	
245 250 255 260	
 atc ccc aac tca aag gtg cag ctg gct gag ccc gac ctg gaa cag gcc	932
Ile Pro Asn Ser Lys Val Gln Leu Ala Glu Pro Asp Leu Glu Gln Ala	
261 266 271 276	
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Ala His Leu Ile Gln Ala Leu Ser Asn His Glu Asp Val Ile His Val	
277 282 287 292	
 tat gat aac att gaa taa ccaggc tacatgtgcc cccgggttcc ttcctagaaa	1034
Tyr Asp Asn Ile Glu *	
293 298	
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1372

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atg gag aca gcc ccc aag ccg ggc aag gat gtc ccg ccc aag aaa gac 168
Met Glu Thr Ala Pro Lys Pro Gly Lys Asp Val Pro Pro Lys Lys Asp
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aaa ctt cag acc aag aga aag aaa ccg cgg cga tac tgg gag gaa gag 216
Lys Leu Gln Thr Lys Arg Lys Lys Pro Arg Arg Tyr Trp Glu Glu Glu
17 22 27 32
acc gtt ccg acc aca gcc gga gcc tct cca ggg cct cct cgt aac aag 264
Thr Val Pro Thr Thr Ala Gly Ala Ser Pro Gly Pro Pro Arg Asn Lys
33 38 43 48
aag aat cgg gag ctc cgt cct cag aga cca aaa aat gct tac atc tta 312
Lys Asn Arg Glu Leu Arg Pro Gln Arg Pro Lys Asn Ala Tyr Ile Leu
49 54 59 64
aag aag tct cgg atc tct aag aag cct cag gtc ccg aag aaa ccc cga 360
Lys Lys Ser Arg Ile Ser Lys Lys Pro Gln Val Pro Lys Lys Pro Arg
65 70 75 80
gaa tgg aag aac ccg gag tcc cag cgc ggc ttg tcc ggg gcc caa gat 408
Glu Trp Lys Asn Pro Glu Ser Gln Arg Gly Leu Ser Gly Ala Gln Asp
81 86 91 96
cca ttc cca ggc ccc gcc ccc gtc cct gtg gaa gtg gtc cag aag ttc 456
Pro Phe Pro Gly Pro Ala Pro Val Pro Val Glu Val Val Gln Lys Phe
97 102 107 112
tgt cgc att gac aaa tcc cga aag cta cca cat tct aaa gcc aaa act 504
Cys Arg Ile Asp Lys Ser Arg Lys Leu Pro His Ser Lys Ala Lys Thr
113 118 123 128

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Lys Ala Ala Arg Ser Glu Leu Leu Leu Ala Glu Glu Pro Gly Phe Leu	
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gtg gag gct gtg gac att gca agt gca gcc aag cac ttt gac ttg aat	696
Val Glu Ala Val Asp Ile Ala Ser Ala Ala Lys His Phe Asp Leu Asn	
177 182 187 192	
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His Leu Ala Phe Gly Gly Arg Arg Gly His Val Ala Ala Leu Asp Trp	
209 214 219 224	
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Val Thr Lys Lys Leu Met Cys Glu Ile Asn Val Met Glu Ala Val Arg	
225 230 235 240	
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Ser Val Gly Lys Ile Val Ala Ala Leu Asn Ala Arg Ala Gly Arg Leu	
305 310 315 320	
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Ser	Thr	Gly	Thr	Tyr	Met	Ala	Thr	Ser	Gly	Leu	Asp	His	Gln	Leu	Lys	
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Ile	Phe	Asp	Leu	Arg	Gly	Thr	Tyr	Gln	Pro	Leu	Ser	Thr	Arg	Thr	Leu	
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Pro	His	Gly	Ala	Gly	His	Leu	Ala	Phe	Ser	Gln	Arg	Gly	Leu	Leu	Val	
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417					422					427					432	
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433					438					443					448	
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Pro	Val	His	Gly	Leu	Gln	Phe	Cys	Pro	Phe	Glu	Asp	Val	Leu	Gly	Val	
449					454					459					464	
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Gly	His	Thr	Gly	Gly	Ile	Thr	Ser	Met	Leu	Val	Pro	Gly	Ala	Gly	Glu	
465					470					475					480	
ccc	aac	ttc	gat	ggc	ctg	gag	agt	aat	cca	tac	aga	agc	cgg	aag	cag	1608
Pro	Asn	Phe	Asp	Gly	Leu	Glu	Ser	Asn	Pro	Tyr	Arg	Ser	Arg	Lys	Gln	
481					486					491					496	
cgc	cag	gag	tgg	gag	gtg	aag	gcc	ctg	cta	gag	aag	gta	cct	gca	gag	1656
Arg	Gln	Glu	Trp	Glu	Val	Lys	Ala	Leu	Leu	Glu	Lys	Val	Pro	Ala	Glu	
497					502					507					512	
ctt	att	tgt	ctg	gac	cca	cga	gcc	ctg	gcc	gag	gtg	gat	gtc	atc	tcc	1704
Leu	Ile	Cys	Leu	Asp	Pro	Arg	Ala	Leu	Ala	Glu	Val	Asp	Val	Ile	Ser	
513					518					523					528	
ctg	gag	cag	gga	aag	aag	gag	cag	ata	gag	agg	ctg	ggc	tat	gac	ccg	1752
Leu	Glu	Gln	Gly	Lys	Lys	Glu	Gln	Ile	Glu	Arg	Leu	Gly	Tyr	Asp	Pro	
529					534					539					544	
cag	gct	aag	gct	ccc	ttc	cag	cca	aag	cca	aag	cag	aag	ggc	cgc	agc	1800
Gln	Ala	Lys	Ala	Pro	Phe	Gln	Pro	Lys	Pro	Lys	Gln	Lys	Gly	Arg	Ser	
545					550					555					560	
tcc	acg	gca	agc	ctg	gtg	aag	agg	aag	agg	aag	gtc	atg	gat	gag	gaa	1848
Ser	Thr	Ala	Ser	Leu	Val	Lys	Arg	Lys	Arg	Lys	Val	Met	Asp	Glu	Glu	
561					566					571					576	
cac	agg	gac	aag	gtc	cgg	cag	agc	ctt	cag	cag	cag	cat	cat	aag	gag	1896
His	Arg	Asp	Lys	Val	Arg	Gln	Ser	Leu	Gln	Gln	Gln	His	His	Lys	Glu	

577	582	587	592	
gcg aag gcc aag ccc acg ggg gcc cgg cca tct gcc ctg gac aga ttt				1944
Ala Lys Ala Lys Pro Thr Gly Ala Arg Pro Ser Ala Leu Asp Arg Phe				
593	598	603	608	
gtg cgc tga gccagac tccaggggttg cctgggaaca gtctctcccc aagatcacct				2000
Val Arg *				
609				
gtagggaaat gagtgttccc tggaacaagg aggtgggggc agtgtggccc cttccccaac				2060
tgggggtgga cagctgtctc ctgggggtggg ttggtattaa agaggaaagc gatttttttg				2120
aaaaaaaaa aaaagggggg gccgttttaa aggatccttg gggggggccca agttttaccg				2180
ggcatgcaac gtaatagttc tttccctata gggagccgaa ttat				2224

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 <222> (121)..(1812)

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atg gag aca gcc ccc aag ccg ggc aag gat gtc ccg ccc aag aaa gac	168
Met Glu Thr Ala Pro Lys Pro Gly Lys Asp Val Pro Pro Lys Lys Asp	
1 5 10 15	
aaa ctt cag acc aag aga aag aaa ccg cgg cga tac tgg gag gaa gag	216
Lys Leu Gln Thr Lys Arg Lys Lys Pro Arg Arg Tyr Trp Glu Glu Glu	
17 22 27 32	
acc gtt ccg acc aca gcc gga gcc tct cca ggg cct cct cgt aac aag	264
Thr Val Pro Thr Thr Ala Gly Ala Ser Pro Gly Pro Pro Arg Asn Lys	
33 38 43 48	
aag aat cgg gag ctc cgt cct cag aga cca aaa aat gct tac atc tta	312
Lys Asn Arg Glu Leu Arg Pro Gln Arg Pro Lys Asn Ala Tyr Ile Leu	
49 54 59 64	
aag aag tct cgg atc tct aag aag cct cag gtc ccg aag aaa ccc cga	360

Lys	Lys	Ser	Arg	Ile	Ser	Lys	Lys	Pro	Gln	Val	Pro	Lys	Lys	Pro	Arg		
65					70					75					80		
gaa tgg aag aac ccg gag tcc cag cgc ggc ttg tcc ggg gcc caa gat 408																	
Glu	Trp	Lys	Asn	Pro	Glu	Ser	Gln	Arg	Gly	Leu	Ser	Gly	Ala	Gln	Asp		
81					86					91					96		
cca ttc cca ggc ccc gcc ccc gtc cct gtg gaa gtg gtc cag aag ttc 456																	
Pro	Phe	Pro	Gly	Pro	Ala	Pro	Val	Pro	Val	Glu	Val	Val	Gln	Lys	Phe		
97					102					107					112		
tgt cgc att gac aaa tcc cga aag cta cca cat tct aaa gcc aaa act 504																	
Cys	Arg	Ile	Asp	Lys	Ser	Arg	Lys	Leu	Pro	His	Ser	Lys	Ala	Lys	Thr		
113					118					123					128		
cga agc cga ctt gag gtg gct gaa gct gag gaa gag gaa aca agt atc 552																	
Arg	Ser	Arg	Leu	Glu	Val	Ala	Glu	Ala	Glu	Glu	Glu	Glu	Thr	Ser	Ile		
129					134					139					144		
aaa gct gct cgt tct gag ctg ctg ctt gct gaa gaa cct ggg ttt ctg 600																	
Lys	Ala	Ala	Arg	Ser	Glu	Leu	Leu	Leu	Ala	Glu	Glu	Pro	Gly	Phe	Leu		
145					150					155					160		
gaa ggg gag gat ggg gaa gac aca gca aag ata tgc cag gct gac att 648																	
Glu	Gly	Glu	Asp	Gly	Glu	Asp	Thr	Ala	Lys	Ile	Cys	Gln	Ala	Asp	Ile		
161					166					171					176		
gtg gag gct gtg gac att gca agt gca gcc aag cac ttt gac ttg aat 696																	
Val	Glu	Ala	Val	Asp	Ile	Ala	Ser	Ala	Ala	Lys	His	Phe	Asp	Leu	Asn		
177					182					187					192		
ctg cgg cag ttt gga ccc tac aga cta aac tac tct cga act gga aga 744																	
Leu	Arg	Gln	Phe	Gly	Pro	Tyr	Arg	Leu	Asn	Tyr	Ser	Arg	Thr	Gly	Arg		
193					198					203					208		
cac ctg gct ttt gga ggg cgc cga ggt cat gtg gct gcc ctt gat tgg 792																	
His	Leu	Ala	Phe	Gly	Gly	Arg	Arg	Gly	His	Val	Ala	Ala	Leu	Asp	Trp		
209					214					219					224		
gta aca aag aag ctt atg tgc gag atc aac gtc atg gag gcg gtg cgg 840																	
Val	Thr	Lys	Lys	Leu	Met	Cys	Glu	Ile	Asn	Val	Met	Glu	Ala	Val	Arg		
225					230					235					240		
gac atc cgg ttt ctc cat tct gag gca ctg ctt gct gtt gct cag aac 888																	
Asp	Ile	Arg	Phe	Leu	His	Ser	Glu	Ala	Leu	Leu	Ala	Val	Ala	Gln	Asn		
241					246					251					256		
cgc tgg ctc cac atc tat gac aat cag ggc att gag ctc cac tgt atc 936																	
Arg	Trp	Leu	His	Ile	Tyr	Asp	Asn	Gln	Gly	Ile	Glu	Leu	His	Cys	Ile		
257					262					267					272		
cgc cgc tgt gac cga gta aca cgg ctt gag ttc ctg ccc ttc cac ttc 984																	
Arg	Arg	Cys	Asp	Arg	Val	Thr	Arg	Leu	Glu	Phe	Leu	Pro	Phe	His	Phe		
273					278					283					288		
ctc ctg gct aca gct tca gaa aca ggg ttt cta acc tac ctg gat gtg 1032																	
Leu	Leu	Ala	Thr	Ala	Ser	Glu	Thr	Gly	Phe	Leu	Thr	Tyr	Leu	Asp	Val		

289	294	299	304	
tca gtg ggg aag att	gtg gca gct ctg aat	gct cga gct ggg cgg ctc		1080
Ser Val Gly Lys Ile	Val Ala Ala Leu Asn	Ala Arg Ala Gly Arg Leu		
305	310	315	320	
gat gtt atg agt cag	aac cct tac aat gcc	gtc atc cat ctc gga cac		1128
Asp Val Met Ser Gln	Asn Pro Tyr Asn Ala	Val Ile His Leu Gly His		
321	326	331	336	
agc aat ggt act gtg	tct tta tgg agt cca	gct atg aag gag cca ctg		1176
Ser Asn Gly Thr Val	Ser Leu Trp Ser Pro	Ala Met Lys Glu Pro Leu		
337	342	347	352	
gca aag att ctc tgt	cat cgt ggt ggg gtc	cgg gct gtg gca gta gat		1224
Ala Lys Ile Leu Cys	His Arg Gly Gly Val	Arg Ala Val Ala Val Asp		
353	358	363	368	
tct aca ggc acg tac	atg gcc acc tct ggc	cta gac cac cag ctg aag		1272
Ser Thr Gly Thr Tyr	Met Ala Thr Ser Gly	Leu Asp His Gln Leu Lys		
369	374	379	384	
atc ttt gac ttg cga	ggg acg tac cag cct	ctg agc act cgg acc ctg		1320
Ile Phe Asp Leu Arg	Gly Thr Tyr Gln Pro	Leu Ser Thr Arg Thr Leu		
385	390	395	400	
ccc cat gga gca ggg	cac ctg gcc ttc tcc	cag agg gga ctg ctg gtg		1368
Pro His Gly Ala Gly	His Leu Ala Phe Ser	Gln Arg Gly Leu Leu Val		
401	406	411	416	
gcg gga atg ggt gac	gtt gtc aac atc tgg	gca ggg cag ggc aag gcc		1416
Ala Gly Met Gly Asp	Val Val Asn Ile Trp	Ala Gly Gln Gly Lys Ala		
417	422	427	432	
agc cca ccc tcc ctt	gaa cag ccc tac ctc	acc cac cgg ctc tca ggc		1464
Ser Pro Pro Ser Leu	Glu Gln Pro Tyr Leu	Thr His Arg Leu Ser Gly		
433	438	443	448	
cct gtg cat ggc ctt	cag ttc tgc ccc ttt	gaa gat gtg ctg ggg gtg		1512
Pro Val His Gly Leu	Gln Phe Cys Pro Phe	Glu Asp Val Leu Gly Val		
449	454	459	464	
ggg cac act ggg ggc	atc acc agc atg ctg	gtc cct ggg gcc ggt gag		1560
Gly His Thr Gly Gly	Ile Thr Ser Met Leu	Val Pro Gly Ala Gly Glu		
465	470	475	480	
ccc aac ttc gat ggc	ctg gag agt aat cca	tac aga agc cgg aag cag		1608
Pro Asn Phe Asp Gly	Leu Glu Ser Asn Pro	Tyr Arg Ser Arg Lys Gln		
481	486	491	496	
cgc cag gag tgg gag	gtg aag gcc ctg cta	gag aag gta cct gca gag		1656
Arg Gln Glu Trp Glu	Val Lys Ala Leu Leu	Glu Lys Val Pro Ala Glu		
497	502	507	512	
ctt att tgt ctg gac	cca cga gcc ctg gcc	gag gtg gat gtc atc tcc		1704
Leu Ile Cys Leu Asp	Pro Arg Ala Leu Ala	Glu Val Asp Val Ile Ser		
513	518	523	528	

ctg gag cag gga aag aag gag cag agc ctt cag cag cag cat cat aag 1752
 Leu Glu Gln Gly Lys Lys Glu Gln Ser Leu Gln Gln Gln His His Lys
 529 534 539 544

gag gcg aag gcc aag ccc acg ggg gcc cgg cca tct gcc ctg gac aga 1800
 Glu Ala Lys Ala Lys Pro Thr Gly Ala Arg Pro Ser Ala Leu Asp Arg
 545 550 555 560

ttt gtg cgc tga gcc agactccagg gttgcctggg aacagtctct cccaagatc 1855
 Phe Val Arg *
 561

acctgtaggg aaatgagtgt tccctggaac aaggaggtgg gggcagtgtg gccccttccc 1915

caactggggg tggacagctg tctcctgggg tgggttggtt ttaaagagga aagcgatttt 1975

ttggaaaaaa aaaaaaaagg gggggccggt ttaaaggatc cttggggggg cccaagttaa 2035

cccgggcatg caacgtaata gttctttccc tataggggagc cgaattat 2083

<210> 581
 <211> 1654
 <212> DNA
 <213> Homo sapiens

<220>
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 <222> (496) .. (1302)

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ctctcttttt tctccctcg ctgctgccc ggcattgctt gatctggcgg ccgctcctac 180

cacctgggc agccgagcag agtgggtccc agcgggtctc cctccctgcc tccctgactt 240

tgcaacaccg cgttcggga ggaccggcct cggcgagga ggaggcggg gagctgcgaa 300

caccagacc caaacctga catgctctgg ggcggagagg aggaagccag gagctgagcg 360

cgccgcggg gctgcttcgc cctccggctc cgagcgccgg gctccgggcg cctgcccctg 420

cgctgggca gcagccttgc tgggtcttgg ggcgcccccc gcttcccgcc ccgggggtcc 480

gcgccggca ggacc atg ctg ctg aaa gag tac cgg atc tgc atg ccg ctc 531
 Met Leu Leu Lys Glu Tyr Arg Ile Cys Met Pro Leu
 1 5 10

acc gta gac gag tac aaa att gga cag ctg tac atg atc agc aaa cac 579
 Thr Val Asp Glu Tyr Lys Ile Gly Gln Leu Tyr Met Ile Ser Lys His
 13 18 23 28

agc cat gaa cag agt gac cgg gga gaa ggg gtg gag gtc gtc cag aat	627
Ser His Glu Gln Ser Asp Arg Gly Glu Gly Val Glu Val Val Gln Asn	
29 34 39 44	
 gag ccc ttt gag gac cct cac cat ggc aat ggg cag ttc acc gag aag	675
Glu Pro Phe Glu Asp Pro His His Gly Asn Gly Gln Phe Thr Glu Lys	
45 50 55 60	
 cgg gtg tat ctc aac agc aaa ctg cct agt tgg gct aga gct gtt gtc	723
Arg Val Tyr Leu Asn Ser Lys Leu Pro Ser Trp Ala Arg Ala Val Val	
61 66 71 76	
 ccc aaa ata ttt tat gtg aca gag aag gct tgg aac tat tat ccc tac	771
Pro Lys Ile Phe Tyr Val Thr Glu Lys Ala Trp Asn Tyr Tyr Pro Tyr	
77 82 87 92	
 aca att aca gaa tac aca tgt tcc ttt ctg ccg aaa ttc tcc att cat	819
Thr Ile Thr Glu Tyr Thr Cys Ser Phe Leu Pro Lys Phe Ser Ile His	
93 98 103 108	
 ata gaa acc aag tat gag gac aac aaa gga agc aat gac acc att ttc	867
Ile Glu Thr Lys Tyr Glu Asp Asn Lys Gly Ser Asn Asp Thr Ile Phe	
109 114 119 124	
 gac aat gaa gcc aaa gac gtg gag aga gaa gtt tgc ttt att gat att	915
Asp Asn Glu Ala Lys Asp Val Glu Arg Glu Val Cys Phe Ile Asp Ile	
125 130 135 140	
 gcc tgc gat gaa att cca gag cgc tac tac aaa gaa tct gag gat cct	963
Ala Cys Asp Glu Ile Pro Glu Arg Tyr Tyr Lys Glu Ser Glu Asp Pro	
141 146 151 156	
 aag cac ttc aag tca gag aag aca gga cgg gga cag ttg agg gaa ggc	1011
Lys His Phe Lys Ser Glu Lys Thr Gly Arg Gly Gln Leu Arg Glu Gly	
157 162 167 172	
 tgg aga gat agt cat cag cct atc atg tgc tcc tac aag ctg gtg act	1059
Trp Arg Asp Ser His Gln Pro Ile Met Cys Ser Tyr Lys Leu Val Thr	
173 178 183 188	
 gtg aag ttt gag gtc tgg ggg ctt cag acc aga gtg gaa caa ttt gta	1107
Val Lys Phe Glu Val Trp Gly Leu Gln Thr Arg Val Glu Gln Phe Val	
189 194 199 204	
 cac aag gtg gtc cga gac att ctg ctg att gga cat aga cag gct ttt	1155
His Lys Val Val Arg Asp Ile Leu Leu Ile Gly His Arg Gln Ala Phe	
205 210 215 220	
 gca tgg gtt gat gag tgg tat gat atg aca atg gat gat gtt cgg gaa	1203
Ala Trp Val Asp Glu Trp Tyr Asp Met Thr Met Asp Asp Val Arg Glu	
221 226 231 236	
 tac gag aaa aac atg cat gaa caa acc aac ata aaa gtt tgc aat cag	1251
Tyr Glu Lys Asn Met His Glu Gln Thr Asn Ile Lys Val Cys Asn Gln	
237 242 247 252	

cat tcc tcc cct gtg gat gac ata gag agt cat gcc caa aca agt aca 1299
 His Ser Ser Pro Val Asp Asp Ile Glu Ser His Ala Gln Thr Ser Thr
 253 258 263 268

tga caat ggatgaagtc cgagaatttg aacgagccac tcaggaagcc accaacaaga 1356
 *
 269

aaatcggcatt tttccacact gcaattttcta tctccagcat cccctgtctg cttttttccg 1416

tccgcagtgc gcctttctagt gctccatcca cccctctctc cacagacgca cccgaatttc 1476

tgctcggttcc caaagatcgg ccccggaata agtctgcccc agaaactctc acacttccag 1536

accctgagaa aaaagccacc ctgaattttac ccggcatgca ctcttcagat aagccatgtc 1596

ggcccaaata tgagtaactt tatataaata tctcatgggg ttttataaaa aaaaaaaaa 1654

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<213> Homo sapiens

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<222> (136)..(1779)

<400> 582

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attgctctaa actgt atg gtg aag ttg gcc aag ggc agg ccc cat ctt agc 171
 Met Val Lys Leu Ala Lys Gly Arg Pro His Leu Ser
 1 5 10

cag tca gta gtt gag acc ttg ttg act caa ttg cac agt gct caa gac 219
 Gln Ser Val Val Glu Thr Leu Leu Thr Gln Leu His Ser Ala Gln Asp
 13 18 23 28

gct gcc cgg att ttg atg tgc cat tgc ctg gca gcc att gcc atg caa 267
 Ala Ala Arg Ile Leu Met Cys His Cys Leu Ala Ala Ile Ala Met Gln
 29 34 39 44

ctg ccg gtg ctg ggt gat ggg atg ctt ggt gac ctc atg gag ctg tac 315
 Leu Pro Val Leu Gly Asp Gly Met Leu Gly Asp Leu Met Glu Leu Tyr
 45 50 55 60

aag gtg att gga cga tca gcc aca gac aag caa caa gaa ctt ctg gtg 363
 Lys Val Ile Gly Arg Ser Ala Thr Asp Lys Gln Gln Glu Leu Leu Val
 61 66 71 76

agt ttg gct act gtg att ttt gtt gca agt cag aag gca ttg tct gtg 411
 Ser Leu Ala Thr Val Ile Phe Val Ala Ser Gln Lys Ala Leu Ser Val

77	82	87	92	
gaa agt aag gca gta att aag cag cag ctt gaa agt gtc tcc aat gga				459
Glu Ser Lys Ala Val Ile Lys Gln Gln Leu Glu Ser Val Ser Asn Gly				
93	98	103	108	
tggt act gta tac cgt att gcc aga cag gct tcc aga atg ggt aat cat				507
Trp Thr Val Tyr Arg Ile Ala Arg Gln Ala Ser Arg Met Gly Asn His				
109	114	119	124	
gac atg gcc aaa gag ctt tat cag agt ttg ctg act cag gtt gcc tca				555
Asp Met Ala Lys Glu Leu Tyr Gln Ser Leu Leu Thr Gln Val Ala Ser				
125	130	135	140	
gaa cat ttc tac ttc tgg cta aat agt ttg aag gag ttt tca cat gca				603
Glu His Phe Tyr Phe Trp Leu Asn Ser Leu Lys Glu Phe Ser His Ala				
141	146	151	156	
gaa cag tgt ctc act ggg ttg caa gag gaa aat tat agt tca gca ctt				651
Glu Gln Cys Leu Thr Gly Leu Gln Glu Glu Asn Tyr Ser Ser Ala Leu				
157	162	167	172	
tct tgc att gct gaa tct tta aaa ttc tat cac aaa ggg att gct tcc				699
Ser Cys Ile Ala Glu Ser Leu Lys Phe Tyr His Lys Gly Ile Ala Ser				
173	178	183	188	
tta aca gca gct agt aca cca ctg aat cct tta agc ttt cag tgt gaa				747
Leu Thr Ala Ala Ser Thr Pro Leu Asn Pro Leu Ser Phe Gln Cys Glu				
189	194	199	204	
ttt gta aaa ctc agg att gac ctt tta caa gcc ttc tct caa ctt atc				795
Phe Val Lys Leu Arg Ile Asp Leu Leu Gln Ala Phe Ser Gln Leu Ile				
205	210	215	220	
tgt act tgt aat agc ctg aag aca agc cca cca cct gca att gcc aca				843
Cys Thr Cys Asn Ser Leu Lys Thr Ser Pro Pro Pro Ala Ile Ala Thr				
221	226	231	236	
aca att gcc atg acc tta gga aat gac ctc cag agg tgt ggt cgc atc				891
Thr Ile Ala Met Thr Leu Gly Asn Asp Leu Gln Arg Cys Gly Arg Ile				
237	242	247	252	
tcc aat cag atg aaa cag tcc atg gaa gaa ttt cga agc ctt gct tct				939
Ser Asn Gln Met Lys Gln Ser Met Glu Glu Phe Arg Ser Leu Ala Ser				
253	258	263	268	
cga tat gga gat ctt tac cag gca tct ttt gat gct gac tca gca act				987
Arg Tyr Gly Asp Leu Tyr Gln Ala Ser Phe Asp Ala Asp Ser Ala Thr				
269	274	279	284	
ttg agg aat gtt gaa cta cag cag cag agc tgt tta ctg ata tct cat				1035
Leu Arg Asn Val Glu Leu Gln Gln Gln Ser Cys Leu Leu Ile Ser His				
285	290	295	300	
gca ata gaa gcc ctg att ttg gat cca gaa tca gca agt ttc cag gaa				1083
Ala Ile Glu Ala Leu Ile Leu Asp Pro Glu Ser Ala Ser Phe Gln Glu				
301	306	311	316	

tat gga tct act gga aca gcc cat gct gat agt gaa tat gaa aga aga	1131
Tyr Gly Ser Thr Gly Thr Ala His Ala Asp Ser Glu Tyr Glu Arg Arg	
317 322 327 332	
atg atg tct gta tat aat cat gtc ttg gag gag gta gaa tca ctc aat	1179
Met Met Ser Val Tyr Asn His Val Leu Glu Glu Val Glu Ser Leu Asn	
333 338 343 348	
cgg aaa tat acc cct gtt tct tat atg cac aca gca tgc ctc tgc aat	1227
Arg Lys Tyr Thr Pro Val Ser Tyr Met His Thr Ala Cys Leu Cys Asn	
349 354 359 364	
gcc atc att gct ttg ctg aaa gtt ccc ctt tct ttc cag aga tat ttt	1275
Ala Ile Ile Ala Leu Leu Lys Val Pro Leu Ser Phe Gln Arg Tyr Phe	
365 370 375 380	
ttc cag aaa cta cag tct acc agc atc aag ctt gct ctg tca cca tcg	1323
Phe Gln Lys Leu Gln Ser Thr Ser Ile Lys Leu Ala Leu Ser Pro Ser	
381 386 391 396	
ccc cgg aat cct gca gag ccc att gct gtc cag aat aac cag cag ctg	1371
Pro Arg Asn Pro Ala Glu Pro Ile Ala Val Gln Asn Asn Gln Gln Leu	
397 402 407 412	
gcg cta aag gta gag gga gtg gtt cag cac gga tct aaa cca gga ctc	1419
Ala Leu Lys Val Glu Gly Val Val Gln His Gly Ser Lys Pro Gly Leu	
413 418 423 428	
ttc cgc aaa att cag tct gtc tgt ctg aat gtt tct tcc aca ctg cag	1467
Phe Arg Lys Ile Gln Ser Val Cys Leu Asn Val Ser Ser Thr Leu Gln	
429 434 439 444	
agt aaa tct gga caa gac tac aag ata ccc att gac aac atg acc aat	1515
Ser Lys Ser Gly Gln Asp Tyr Lys Ile Pro Ile Asp Asn Met Thr Asn	
445 450 455 460	
gag atg gag caa agg gtt gaa cct cat aat gat tac ttc agt act caa	1563
Glu Met Glu Gln Arg Val Glu Pro His Asn Asp Tyr Phe Ser Thr Gln	
461 466 471 476	
ttt ctg ttg aac ttt gct atc ctt gga aca cac aac att aca gtg gaa	1611
Phe Leu Leu Asn Phe Ala Ile Leu Gly Thr His Asn Ile Thr Val Glu	
477 482 487 492	
tct tct gtg aaa gat gcc aat ggt ata gta tgg aag act ggt ccc aga	1659
Ser Ser Val Lys Asp Ala Asn Gly Ile Val Trp Lys Thr Gly Pro Arg	
493 498 503 508	
act acc ata ttt gta aaa tcc ctg gaa gac cct tat tcc cag caa att	1707
Thr Thr Ile Phe Val Lys Ser Leu Glu Asp Pro Tyr Ser Gln Gln Ile	
509 514 519 524	
cgc tta caa cag cag caa gcc cag cag cca tta cag cag cag cag caa	1755
Arg Leu Gln Gln Gln Gln Ala Gln Gln Pro Leu Gln Gln Gln Gln Gln	
525 530 535 540	

cgc aat gcc tac aca cgg ttt taa ccatggaatg aatgcactgc agactctcaa 1809
 Arg Asn Ala Tyr Thr Arg Phe *
 541 546

gagatcaatc aaattgccag aaacagtttg gtttttcata tggaataagt attaaagtta 1869
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 Met Ala Thr
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 4 9 14 19

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 Leu Ser Asn Leu His Leu Lys Glu Glu Lys Ile Lys Pro Asp Thr Asn
 20 25 30 35

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 Gly Ala Val Val Lys Thr Asn Ala Asn Ala Glu Lys Thr Asp Glu Glu
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 Glu Lys Glu Asp Arg Ala Ala Gln Ser Leu Leu Asn Lys Leu Ile Arg
 52 57 62 67

agc aac ctt gtt gat aac aca aac caa gtg gaa gtc ctg cag cgg gat	415
Ser Asn Leu Val Asp Asn Thr Asn Gln Val Glu Val Leu Gln Arg Asp	
68 73 78 83	
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Pro Asn Ser Pro Leu Tyr Ser Val Lys Ser Phe Glu Glu Leu Arg Leu	
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Lys Pro Gln Leu Leu Gln Gly Val Tyr Ala Met Gly Phe Asn Arg Pro	
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Ser Lys Ile Gln Glu Asn Ala Leu Pro Leu Met Leu Ala Glu Pro Pro	
116 121 126 131	
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Phe Val Leu Ala Met Leu Ser Gln Val Glu Pro Ala Asn Lys Tyr Pro	
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Gln Cys Leu Cys Leu Ser Pro Thr Tyr Glu Leu Ala Leu Gln Thr Gly	
164 169 174 179	
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Lys Val Ile Glu Gln Met Gly Lys Phe Tyr Pro Glu Leu Lys Leu Ala	
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Tyr Ala Val Arg Gly Asn Lys Leu Glu Arg Gly Gln Lys Ile Ser Glu	
196 201 206 211	
cag att gtc att ggc acc cct ggg act gtg ctg gac tgg tgc tcc aag	847
Gln Ile Val Ile Gly Thr Pro Gly Thr Val Leu Asp Trp Cys Ser Lys	
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Leu Lys Phe Ile Asp Pro Lys Lys Ile Lys Val Phe Val Leu Asp Glu	
228 233 238 243	
gct gat gtc atg ata gcc act cag ggc cac caa gat cag agc atc cgc	943
Ala Asp Val Met Ile Ala Thr Gln Gly His Gln Asp Gln Ser Ile Arg	
244 249 254 259	
atc cag agg atg ctg ccc agg aac tgc cag atg ctg ctt ttc tcc gcc	991
Ile Gln Arg Met Leu Pro Arg Asn Cys Gln Met Leu Leu Phe Ser Ala	
260 265 270 275	
acc ttt gaa gac tct gtg tgg aag ttt gcc cag aaa gtg gtc cca gac	1039
Thr Phe Glu Asp Ser Val Trp Lys Phe Ala Gln Lys Val Val Pro Asp	
276 281 286 291	
cca aac gtt atc aaa ctg aag cgt gag gaa gag acc ctg gac acc atc	1087

cgg gcc cag gca gca aag gca ggg gct cct ggc aag gcc tga ccccatg 621
 Arg Ala Gln Ala Ala Lys Ala Gly Ala Pro Gly Lys Ala *
 117 122 127
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 tgctatcatt tccgcaggcc agatcagaaa agggagctca ggtaccttcc agagagttag 180
 acccagcgcc cttgtctcgc acccagtagg ctttcatccc cgcc atg gcg gag ctg 236
 Met Ala Glu Leu
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atc cag aag aag cta cag gga gaa gtg gag aaa tat caa cag cta cag 284
 Ile Gln Lys Lys Leu Gln Gly Glu Val Glu Lys Tyr Gln Gln Leu Gln
 5 10 15 20

aag gac tta agt aaa tcc atg tcg ggg agg cag aaa ctt gaa gca caa 332
 Lys Asp Leu Ser Lys Ser Met Ser Gly Arg Gln Lys Leu Glu Ala Gln
 21 26 31 36

cta aca gaa aat aat atc gtg aaa gag gtg agg gac tgg gat ttg tgg 380
 Leu Thr Glu Asn Asn Ile Val Lys Glu Val Arg Asp Trp Asp Leu Trp
 37 42 47 52

ggc gag gag gga cct gta cta gcc atg gtt ctg atc aca tat gtc cca 428
 Gly Glu Glu Gly Pro Val Leu Ala Met Val Leu Ile Thr Tyr Val Pro
 53 58 63 68

tcc ctc cat cag gaa ctg gcc ctg ctg gat ggg tcc aac gtg gtc ttt 476
 Ser Leu His Gln Glu Leu Ala Leu Leu Asp Gly Ser Asn Val Val Phe
 69 74 79 84

aaa ctt ctg ggt ccg gtg cta gtc aaa cag gag ctg ggg gag gct cgg 524
 Lys Leu Leu Gly Pro Val Leu Val Lys Gln Glu Leu Gly Glu Ala Arg

85	90	95	100	
gcc aca gta ggg aag agg ctg gac tat atc aca gct gaa att aag cga				572
Ala Thr Val Gly Lys Arg Leu Asp Tyr Ile Thr Ala Glu Ile Lys Arg				
101	106	111	116	
tac gaa tcc cag ctt cgg gat ctt gag cgg cag tca gag caa cag agg				620
Tyr Glu Ser Gln Leu Arg Asp Leu Glu Arg Gln Ser Glu Gln Gln Arg				
117	122	127	132	
gag acc ctt gct cag ctg cag cag gag ttc cag cgg gcc cag gca gca				668
Glu Thr Leu Ala Gln Leu Gln Gln Glu Phe Gln Arg Ala Gln Ala Ala				
133	138	143	148	
aag gca ggg gct cct ggc aag gcc tga cccca tgggtgggggg aggggagggg				720
Lys Ala Gly Ala Pro Gly Lys Ala *				
149	154			

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tgaaaaaaaaaaa aaaagtcgac cggccgcgaa tttagtagta gtaggcggcc gctctagagg	840
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agcttctatt ccacaacaac aaaacagtaa gtgtagaaaa tggagataga ggaagcaaaa	240
ctttcaattt gggcacagac cctgtttctt taagaaatta tccctataaa atatgtgact	300
catgtgaa atg aat ttg aaa aat att tcg ggc tta att att agt aaa aag	350
Met Asn Leu Lys Asn Ile Ser Gly Leu Ile Ile Ser Lys Lys	
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Asn Cys Ser Arg Lys Lys Pro Asp Glu Phe Asn Val Cys Glu Lys Leu	
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Leu Leu Asp Ile Arg His Glu Lys Ile Pro Ile Gly Glu Lys Ser Tyr	
31 36 41 46	
aaa tat gat caa aaa agg aat gcc att aat tat cac cag gat ctc agt	494
Lys Tyr Asp Gln Lys Arg Asn Ala Ile Asn Tyr His Gln Asp Leu Ser	
47 52 57 62	
cag cca agt ttt ggc caa tct ttt gag tat agt aaa aat gga caa ggc	542
Gln Pro Ser Phe Gly Gln Ser Phe Glu Tyr Ser Lys Asn Gly Gln Gly	
63 68 73 78	
ttc cat gat gag gca gca ttt ttt aca aat aag aga tct cag ata gga	590
Phe His Asp Glu Ala Ala Phe Phe Thr Asn Lys Arg Ser Gln Ile Gly	
79 84 89 94	
gag aca gtc tgt aaa tat aac gaa tgt gga aga acc ttc att gaa agt	638
Glu Thr Val Cys Lys Tyr Asn Glu Cys Gly Arg Thr Phe Ile Glu Ser	
95 100 105 110	
tta aag ctg aat ata tct caa aga cct cat ttg gaa atg gag ccg tat	686
Leu Lys Leu Asn Ile Ser Gln Arg Pro His Leu Glu Met Glu Pro Tyr	
111 116 121 126	
gga tgc agt att tgc ggg aag tcc ttc tgc atg aat tta agg ttt gga	734
Gly Cys Ser Ile Cys Gly Lys Ser Phe Cys Met Asn Leu Arg Phe Gly	
127 132 137 142	
cat cag aga gct ctt aca aag gac aat cct tat gaa tat aat gaa tat	782
His Gln Arg Ala Leu Thr Lys Asp Asn Pro Tyr Glu Tyr Asn Glu Tyr	
143 148 153 158	
ggg gaa atc ttc tgt gac aat tca gct ttc att atc cat cag gga gct	830
Gly Glu Ile Phe Cys Asp Asn Ser Ala Phe Ile Ile His Gln Gly Ala	
159 164 169 174	
tac aca aga aag att ctc cgt gaa tat aaa gtg agt gac aaa acc tgg	878
Tyr Thr Arg Lys Ile Leu Arg Glu Tyr Lys Val Ser Asp Lys Thr Trp	
175 180 185 190	
gaa aag tca gct ctc tta aaa cat caa ata gta cac atg ggg gga aag	926
Glu Lys Ser Ala Leu Leu Lys His Gln Ile Val His Met Gly Gly Lys	
191 196 201 206	
tct tat gat tac aat gaa aat ggg agt aat ttc agc aag aag tca cat	974
Ser Tyr Asp Tyr Asn Glu Asn Gly Ser Asn Phe Ser Lys Lys Ser His	
207 212 217 222	
ctt acc cag ctt cgg aga gct cac aca gga gaa aaa acc ttt gaa tgt	1022
Leu Thr Gln Leu Arg Arg Ala His Thr Gly Glu Lys Thr Phe Glu Cys	
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Gly Glu Cys Gly Lys Thr Phe Trp Glu Lys Ser Asn Leu Thr Gln His	
239 244 249 254	
cag aga aca cac aca gga gag aag ccc tat gaa tgt act gaa tgt ggg	1118

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Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Glu Cys Thr Glu Cys Gly	
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Lys Ala Phe Cys Gln Lys Pro His Leu Thr Asn His Gln Arg Thr His	
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Thr Gly Glu Lys Pro Tyr Glu Cys Lys Gln Cys Gly Lys Thr Phe Cys	
287	292 297 302
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Val Lys Ser Asn Leu Thr Glu His Gln Arg Thr His Thr Gly Glu Lys	
303	308 313 318
ccc tat gaa tgt aat gca tgt ggg aaa tcc ttc tgc cac aga tca gcc	1310
Pro Tyr Glu Cys Asn Ala Cys Gly Lys Ser Phe Cys His Arg Ser Ala	
319	324 329 334
ctc act gtg cat cag aga aca cac aca ggg gag aaa ccg ttt ata tgt	1358
Leu Thr Val His Gln Arg Thr His Thr Gly Glu Lys Pro Phe Ile Cys	
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Gln Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Asn Glu Cys Gly	
367	372 377 382
aaa acc ttc tgt gaa aaa tca gct ctc act aaa cat cag agg act cac	1502
Lys Thr Phe Cys Glu Lys Ser Ala Leu Thr Lys His Gln Arg Thr His	
383	388 393 398
aca ggg gag aag ccg tat gag tgt aat gca tgt ggg aag acc ttt agt	1550
Thr Gly Glu Lys Pro Tyr Glu Cys Asn Ala Cys Gly Lys Thr Phe Ser	
399	404 409 414
cag agg tca gtg ctc acc aaa cat cag aga att cac aca agg gtg aaa	1598
Gln Arg Ser Val Leu Thr Lys His Gln Arg Ile His Thr Arg Val Lys	
415	420 425 430
gct ctt tca aca tcc tga atgtta gaagccttca tacacttggtg aaattgggtta	1652
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Met Ala Leu Arg Glu Leu Lys Val Cys Leu Leu Gly Asp Thr
1 5 10
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Gly Val Gly Lys Ser Ser Ile Val Trp Arg Phe Val Glu Asp Ser Phe
15 20 25 30
gat cca aac atc aac cca aca ata ggg gca tct ttt atg acc aag act 203
Asp Pro Asn Ile Asn Pro Thr Ile Gly Ala Ser Phe Met Thr Lys Thr
31 36 41 46
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Val Gln Tyr Gln Asn Glu Leu His Lys Phe Leu Ile Trp Asp Thr Ala
47 52 57 62

gga caa gaa cga ttt cgt gcc tta gca cca atg tac tat cga ggg tcg	299
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63 68 73 78	
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Ala Ala Ala Ile Ile Val Tyr Asp Ile Thr Lys Glu Glu Thr Phe Ser	
79 84 89 94	
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Thr Leu Lys Asn Trp Val Lys Glu Leu Arg Gln His Gly Pro Pro Asn	
95 100 105 110	
att gta gtt gcc att gca gga aat aaa tgt gat ctt atc gat gta aga	443
Ile Val Val Ala Ile Ala Gly Asn Lys Cys Asp Leu Ile Asp Val Arg	
111 116 121 126	
gaa gtc atg gag aga gat gca aag gac tac gcc gac tct att cat gca	491
Glu Val Met Glu Arg Asp Ala Lys Asp Tyr Ala Asp Ser Ile His Ala	
127 132 137 142	
att ttt gta gag acc agc gca aaa aac gcg ata aac ata aat gaa ctc	539
Ile Phe Val Glu Thr Ser Ala Lys Asn Ala Ile Asn Ile Asn Glu Leu	
143 148 153 158	
ttt ata gaa att agt cga aga att cca tcc act gac gcc aac ctg cca	587
Phe Ile Glu Ile Ser Arg Arg Ile Pro Ser Thr Asp Ala Asn Leu Pro	
159 164 169 174	
tct ggc ggt aag ggc ttc aaa ctc cga aga cag cct tca gag cca aag	635
Ser Gly Gly Lys Gly Phe Lys Leu Arg Arg Gln Pro Ser Glu Pro Lys	
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Arg Ser Cys Cys *	
191	
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39 44 49 54

Met Ser Gly Leu

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Ser Ala Asp Arg Asn Leu Ile Lys Asn Thr Ala Pro Val Asn Thr Val	
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Thr Thr Asp Thr Gln Val Ile Ser His Glu Lys Glu Asn Lys Leu Glu				
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Ser Leu Val Leu Thr His Leu Ser Arg Cys Asp Ser Asp Leu Cys Glu				
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